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Financial Analysis of Coca-Cola Company
Finanční analýza společnosti Coca-Cola

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1. Introduction
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3. Characteristics of Coca-Cola Company
4. Financial Analysis of Coca-Cola Company
5. Conclusion

Bibliography
List of Abbreviations
Declaration of Utilisation of Results from the Bachelor Thesis
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Annexes

References:

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Content

1.Introduction

Under the environment of rapid economic development in the world, financial accounting as a business language, its value and role are becoming more and more obvious, so it has been greatly developed and improved. For enterprises, in order to obtain the necessary information through the economic management activity of accounting, it is necessary to make full use of the important carrier of financial statements, which has also been paid more and more attention.

The goal of this thesis is to analyze the financial situation of Coca-Cola company from 2014 to 2017 through financial ratio analysis and Dupont analysis.

The thesis divided into five chapters in order to analyze the Coca-Cola company. The first chapter is the introduction. The second chapter is the description of financial analysis method. The third chapter is the financial characteristics of Coca-Cola company. Chapter four is the financial analysis of Coca-Cola. The last chapter is the conclusion.

In chapter 2, financial analysis methods are described. First, we describe the financial statements. There are three kinds of financial statements: balance sheet, income statement and cash flow statement. This is the specific information of the company. By using the data provided in these financial statements, various ratios can be calculated to estimate the financial status of the company. Then, we introduce common analysis, including vertical common size analysis and horizontal common size analysis. The last part is financial ratio analysis, which includes profitability, liquidity ratio, solvency ratio, activity ratio and Dupont analysis.

In Chapter 3, we focused on the basics of the Coca-Cola Company. The first part is the historical development of the Coca-Cola Company. Coca-Cola is the world's largest beverage production company. Its products are sold directly in more than 200 countries, and the Coca-Cola Company was listed on the New York Stock Exchange in 1919. Then we introduced the company structure including its board composition and company management. Finally, we introduced the current competitive advantages and disadvantages of the Coca-Cola Company. The next section is a common-size analysis of Coca-Cola. I used the Coca-Cola Annual Report from 2014 to 2017, based on the financial data in the financial statements, the absolute value of the change, the percentage change, and a financial item as a percentage point calculation percentage. The results obtained were evaluated using the vertical Common-size analysis and horizontal common-size analysis.

In Chapter 4, We use financial ratios and ROE pyramid decomposition. There are four

basic financial ratios here: profitability ratios, liquidity ratios, solvency, activity ratios. Each involves the company's daily operations. We will analyze them one by one. Finally, DuPont analysis method is used to analyze Coca-Cola's financial ratios. Assess the company's financial position by comparing financial ratios and financial data. ROE pyramid decomposition is the result of calculating the net profit margin, asset turnover and financial leverage of the three basic financial ratios.

2.Description of the financial analysis methodology

"*The tools and techniques presented in this section facilitate evaluations of company data. Evaluations require comparisons. It is difficult to say that a company's financial performance was "goods" without clarifying the basis for comparison.*" (Fridson and Alvarez, 2011, p. 264).

In this chapter we introduce financial analysis methodology which we will use to analyze the Coca-Cola company's financial situation. We divided this chapter into five parts, the first part is the financial statements, this part is very important. Because if we want to use the financial analysis methods which are described in the next four parts, you must know and use the data from the financial statements. And in the next four parts, we will describe common-size analysis, financial ratio analysis, DuPont analysis and the influence quantification.

"*The financial performance of a company is shown by the aggregated presentation of all its activities. Financial analysis reflect the total output and quality of production, the level and quality of marketing and business activities, innovations and other company activities. It is obvious that the financial performance represents a multi-criteria model composed of a large amount of partial characteristics and relationships.*" (Dluhošová et al., 2014, p. 71).

The descriptions provided in this chapter are based on the following books: Dluhošová et al. (2014), Fridson and Alvarez (2011) and Robinson et al. (2015).

2.1 Financial statement

"*The company's financial activities are recorded in the financial statements. The three basic financial statements in the financial report are the balance sheet, the income statement and the cash flow statement. The following sections focus on the format, content, structure and importance of each approach.*" (Dluhošová et al., 2014, p. 49).

2.1.1 Balance sheet

"*The balance sheet is fundamental financial statement; the other statements have been derived historically to provide a detailed view of given economic characteristics. The balance sheet provides a snapshot of a company's financial position at a specific point in time, presenting its assets, owner-supplied capital (equity) and liabilities (debt). The balance sheet is sometimes referred to as a statement of financial position.*" (Dluhošová et al., 2014, p. 49).

"*Assets are the resources controlled by the company as a result of past events and from which future economic benefits are expected to flow to the company. Long-term assets are classified into three subcategories: tangible assets, intangible assets and financial investments. Current (short-term) assets are assets that are expected to be realized or are intended for sale or consumption in the company's normal operating cycle. Such assets can be converted into cash relatively quickly, within one year, and can be used immediately to pay short-term obligation.*" (Dluhošová et al., 2014, p. 49, 51-52).

"*Equity, equity includes the investment of either the company' owner or its shareholders in the company. On a company's balance sheet, equity is represented by the following components: common stock, preferred stock, paid-in capital (share premium) and retained earnings. Equity can be calculated by subtracting the total liabilities from the total assets.*" (Dluhošová et al., 2014, p. 52).

Tab2.1: The balance sheet structure.

Balance Sheet	
TOTAL ASSETS	**TOTAL EQUITY + LIABILITIES**
Long-term assets	**Equity**
Tangible assets	Share capital (par value)
Intangible assets	Contributed capital
Financial investment	Retained earnings
Other long-term assets	
Current assets	**Liabilities**
Inventories	**Current liabilities**
Accounts receivable	Short-term borrowings
Marketable securities	Accounts payable
Other short-term assets	Notes payable
Cash and cash equivalents	**Long-term liabilities**
Other assets	Long-term debt
	Other liabilities

Source: Dluhosova et al ., 2014, p . 51.

"Liabilities (debt) represent capital for asset financing provided by creditors. Liabilities

are divided into two group: current (short- term) liabilities and long-term (non-current) liabilities. Current liabilities are those liabilities that are expected to be settled in the company's normal operating cycle. The most common components of the current liabilities are: accounts payable, short-term borrowing. Long-term liabilities include loans from bank and other sources the lend the money for longer than 12 months. Common types of long-term liabilities include long-term bank loans and bond issued." (Dluhošová et al., 2014, p. 49).

So we can get the balance sheet structure in Table 2.1

"*In its simple form, a balance sheet is represented by the following balance sheet equation:*" (Dluhošová et al., 2014, p. 49)

$$Total\ assets = Total\ equity + Total\ liabilities. \tag{2.1}$$

2.1.2 Income statement

"*The Income statement present information on the financial result of companies' business activities over a period of time. The income statement communicates the amount of revenues that the company generated during a period and the costs that it incurred in connection with generating the revenues. The basic equation underlying the income statement is:*" (Dluhošová et al., 2014, p. 53).

$$Revenues - Expenses(costs) = Net\ income/loss. \tag{2.2}$$

"*Revenues refer to amounts charged for the delivery of goods or services or any other use of capital or assets association with the main operations of a company." (Dluhošová et al., 2014, p. 54).*

"From the revenues, the costs of goods sold is subtracted (cost of production or services to be sold) to yield the gross profit. Next, operating costs are deducted to determine the operating profit. The operating costs usually consist of: marketing and selling expenses, general and administrative expenses, depreciation." (Dluhošová et al., 2014, p. 54).

"The operating profit reflects a company's from is usual business activities before deducting interest, other debt expenses and taxed." (Dluhošová et al., 2014, p. 54).

"To determine the earning before taxes (pre-tax income), financing expenses must be subtracted. These are the expenses associated with the company's debt financing." (Dluhošová

et al., 2014, p. 54).

"Next, the company's income tax is calculated, based on its earning before taxes and applicable tax rate for amount of income reported. The resulting number is the net income." (Dluhošová et al., 2014, p. 54).

So we can get following conclusions and the income statement structure table 2.2

"EBIT: earning before interest and taxes (operating profit).

EBT: earning before taxes (pre-tax income).

EAT: earning after taxes (net profit).[1]*"*

Tab. 2.2 Income statement structure.

+	**Revenues**	Symbol
-	Costs of goods sold	
-	Operating costs	
=	**Operating profit**	EBIT
+	Financial revenues	
-	Financial costs	
=	**pre-tax income**	EBT
-	Income tax	
=	**Net profit**	EAT

Source: (Dluhosova et al ., 2014, p .54).

2.1.3 Cash flow statement

"*The cash flow statement provides information about a company's cach receipt (inflows) and cash payments (outflows) during an accounting period, showing how these cash flows link the ending cash balance to the beginning balance shown on the company's balance sheet.*" (Dluhošová et al., 2014, p. 55).

"*Operating activities include the company's day-to-day activities that create revenues. Cash inflows result from cash sales and from the collection of accounts receivable. Cash outflows result in cash payments for inventory, salaries, taxes and other operation-related expenses and from paying accounts payable. Investing activities include purchasing and selling*

[1] Source: Financial management and decision-making of a company: analysis, investing, valuation, sensitivity, risk, flexibility; Dluhosova, D. et al., 2014, p .55.

long-term assets. Financing activities include obtaining and repaying capital, such as equity and long-term liabilities. The cash inflows in this category include cash receipts from issuing shares or bonds and from borrowings. The cash outflows include cash payments to repurchase shares, to pay dividends and to repay bonds and other borrowings." (Dluhošová et al., 2014, p. 56).

So we get the cash flow statement structure table 2.3. The basic formula of the cash flow statement is:

$$\text{Net cash flow} = \text{Total of inflow} - \text{Total of outflow} \quad (2.3)$$

$$Net\ cashflow = CF\ from\ operating + CF\ from\ investing + CF\ From\ financing \quad (2.4)$$

Tab. 2.3: Cash flow statement structure.

Operating activities	
+	Net income
+	Depreciation
-	Net inventories
-	Net accounts receivable
+	Net accounts payable
=	**Cash flow from operating activities**
Investing activities	
-	Net investments
=	**Cash flow from investing activities**
Financing activities	
+	Net borrowing
+	Net retained earnings
-	Dividends
+	Net sale of stock
=	**Cash flow from financing activities**
=	**Net cash flow = $CF_{oper} + CF_{inv} + CF_{fin}$**

Source: (Dluhosova et al., 2014, p. 57).

"The importance of the cash flow statement lies in the fact that it provides an overview of the financial and investment process during a given period and the cash inflows and outflows associated with these processes. Moreover, it enable the analysis of the financial situation of a

company with respect to the company's liquidity and its evolution during a given period." (Dluhošová et al., 2014, p. 57).

2.2 Common-size Analysis

*"Financial data, including entire financial statements, in relation to a single financial statement item, or base. e. Items used most frequently as the bases are total assets or revenue. In essence, common - size analysis creates a ratio between every financial statement item and the base item." (*Fridson and Alvarez, 2011, p. 270*).*

"Common - size analysis was demonstrated in chapters for the income statement, balance sheet, and cash flow statement. In this section, we present common - size analysis of financial statements in greater detail and include further discussion of their interpretation." (Fridson and Alvarez, 2011, p. 270).

There are two types of common-size analysis, one is horizontal common-size analysis and the other is vertical common-size analysis.

2.2.1 Vertical common-size Analysis

"*Vertical common-size analysis is used to analysis the composition of a given financial statement item. The composition is expressed as a percentage proportion for a given item or base. In a financial statement, the vertical analysis is used to analyse the composition of assets, equity and liabilities. Vertical common-size analysis of the income statement divides each income statement item by the revenues or sometimes by the total assets.* The proportion of the item is expressed as:" (Dluhošová et al., 2014, p. 73-74).

$$Proportion = \frac{U_i}{\sum U_i} . \tag{2.5}$$

Where U_i is the value of a given item and $\sum U_i$ is the base.

2.2.2 Horizontal common-size Analysis

"*Horizontal common-size analysis can refer either to an analysis comparing the specific financial statements items and their values with prior or future time periods or to a cross-sectional analysis of one company with another. Horizontal common-size is based on the computing the increase or decrease (in absolute or percentage terms) of each item from the prior period*:" (Dluhošová et al., 2014, p. 72-73).

$$Absolute\ charge = U_t - U_{t-1} = \Delta U_t\ . \tag{2.6}$$

The percentage change rate can be defined as:

$$Percentage\ change = \frac{U_t\ -\ U_{t-1}}{U_{t-1}} = \frac{\Delta U_t}{U_{t-1}} \times 100\%. \tag{2.7}$$

Where U_t is the value, t is the current period and *t-1* is the prior period.

"*In the case of horizontal analysis, it is necessary to consider possible changes in the evolution of specific economic conditions, such as tax changes, changes in capital markets, and changes in production input prices.*" (Dluhošová et al., 2014, p. 73).

2.3 Financial Ratio Analysis

Financial Ratio Analysis Method: By calculating the proportion of relevant indicators in financial statements, analyzing the company's financial situation and operating performance, to understand the development prospects of enterprises. It is the most basic financial analysis tool. By comparing the data of several important items in the same financial statement, we can find the proportion of analysis and evaluation of the company's business activities, as well as the current and historical situation of the company.

"*There are many relationships between financial accounts and between expected relationships from one point in time to another. Ratios are a useful way of expressing these relationships. Ratios express one quantity in relation to another (usually as a quotient).*" (Fridson and Alvarez, 2011, p. 265).

There are four financial ratios: profitability, liquidity, solvency and activity.

2.3.1 Profitability ratios

"*The ability to generate profit on capital invested is a key determinant of a company's overall value and the value of the securities that it issues. Profitability reflects a company's competitive position in the market and the quality of its management. Profitability ratios can be modified according to the level of earnings used for the calculation. Primary, earnings before interest and taxes (EBIT), earning before taxes (EBT) or earnings after taxes (EAT) may be used. This is important in the situation in which the company has a marginal influence on its capital structure mix.*" (Dluhošová et al., 2014, p. 79).

There are four basic profitability ratios: operating profit margin, net profit margin return on assets and return on equity.

"*Operating profit margin (OPM)* *the operating profit margin indicates the percentage of revenues available to cover operating and other expenditures. A higher operating profit margin indicates a combination of higher product pricing and lower production and overhead costs. The ability to charge a higher product price is constrained by competition, so the operating income or EBIT is affected by competition. On the costs side, a higher operating profit margin can indicate that the company has a competitive advantage in production costs or lower overhead costs. And operating profit margin is computed as:*" (Dluhošová et al., 2014, p. 80-81).

$$\text{OPM} = \frac{Operating\ profit}{Revenues} . \tag{2.8}$$

We give examples to help us understand the operating profit margin. Neil is doing computer sales in the local area, and most of his goods are sold locally. In this year, Neil's sales revenue is 500,000 euros, the store's rent is 50,000 euros, the cost of sales is 200,000 euros, the store staff is 20,000 euros, and other operating expenses are 30,000 euros. In the first step, we calculate the operating profit is $(500000 - (50000 + 200000 + 20000 + 30000) = 200000)$. Finally, we calculate the operating profit margin $(200000 \div 500000 = 0.4)$. This shows that there is 0.6 euros in sales per euro to cover operating expenses and 0.4 euros in non-operating expenses.

According to the *income statement structure table.2.2* operating profit can be converted to EBIT (earnings before interest and taxes), in this formula.

"Net profit margin (NPM) *Measure the profitability of the company's production and sales after deducting all expenses (operating, interest and taxes)."* (Dluhošová et al., 2014, p. 81). The net profit margin is computed as:

$$\text{NPM} = \frac{Net\ profit}{Revenues} . \tag{2.9}$$

We give examples to help us understand the net profit margin. Jack has many bicycle sales outlets in the area. In this year Jack's bicycle sales totaled 1 million euros. The cost of bicycle sales is 300,000 euros, the shop rent is 50,000 euros, the store staff is 50,000 euros, the other operating expenses are 30,000 euros, the interest expense is 20,000 euros, and the income tax payable is 40,000 euros. The first step is to calculate EBIT is $(1000000 - (300000 + 50000 + 50000 + 30000) = 570000)$. The second step is to calculate the EBT result is $(570000 - 20000 = 550000)$. The third step is to calculate the EAT (net income) result is $(550000 - 40000 = 510000)$. Finally, we can get the net profit margin is $(510000 \div 1000000 = 0.51)$. This result tells us that for every sale of one euro of sales revenue, it can be converted into a net profit of 0.51 euros.

According to the *income statement structure table.2.2* net profit can be converted to EAT (earnings after taxes), in this formula.

"Return on assets (ROA) *measures the return earned by a company on its assets. The higher the ratio, the more income is generated by a given level of assets."* (Dluhošová et al., 2014, p. 80).

Usually ROA measures how a company manages its assets effectively over a period of time to generate profits. The rate of return on assets is calculated as:

$$ROA = \frac{Operating\ profit}{Total\ assets} . \tag{2.10}$$

We can give an example to help us understand the return on assets. Bob has a medical supplies manufacturing company whose products are sold throughout the country. One day, Bob asked a financial analyst to assess the company's operations. This year, Bob's operating profit was 1 million euros and its total assets were 800,000 euros. So we can calculate the

company's return on assets is ($1000000 \div 800000 = 1.25$). This result tells us that during the year Bob's company generated a operating profit of 1.25 euros with one euro of assets. Explain that the company's operations are good and can attract potential investors.

"***Return on equity (ROE)*** *measures the return earned by a company on its equity capital, including preferred equity and common equity. As noted, the return is measured as net profit (i.e. interest on debt capital is not included in the return on equity capital). A variation of the return on equity is the return on common equity, which measures the return earned by a company on its common equity.*" (Dluhošová et al., 2014, p. 80).

ROE also measures how managers use equity to fund their day-to-day operations and follow-up development. The return on equity is computed as:

$$ROE = \frac{Net\ profit}{Equity}\ . \tag{2.11}$$

We can give examples to help us understand the return on equity. Tom has a large toy production company with products all over the European market. In this year, Tom's financial statements tell us that the company's net income is 10 million euros, and the company's preferred stock is 1.5 million euros. If Tom is the company's largest shareholder with 85,000 shares of common stock, the price per share is 16 euros. Based on these data we calculate the return on equity. The first step we have to calculate the net profit after deducting preferred stock is ($10000000 - 1500000 = 8500000$). The second part of our calculation of the value of common stock is ($85000 \cdot 16 = 1360000$). Finally, we calculate the return on equity to get the result is ($8500000 \div 1360000 = 6.25$). This result tells us that every euro of common stock can bring in a net income of 6.25 euros, which is 625%. The higher the return on equity, the higher the net profit that shareholders receive, and the greater their ability to attract investors.

2.3.2 Liquidity Ratios

"*Liquidity analysis, which is focused on each flow, measures a company's ability to meet its short-term obligations. Liquidity measures how quickly assets are converted into cash. In day-to-day operations, liquidity management is typically achieved through the efficient use of assets. In the medium term, liquidity in the non-financial sector is also addressed by managing the structure of liabilities. Liabilities ratios reflect a company's position at a point in time and therefore typically use data from the ending balance sheet rather than the average. The current,*

quick and cash ratios reflect three measures of a company's ability to pay its current liabilities." (Dluhošová et al. , 2014, p. 81).

There are three basic liquidity ratios: current ratio, quick ratio and cash ratio.

Current ratio is used to measure the ability of a company to repay its short-term liabilities with its current assets. and it is computed as:

$$current\ ratio = \frac{Current\ assets}{Current\ liabilities}\ . \tag{2.12}$$

"*This ratio expresses the current assets (assets expected to be consumed or converted into cash within one year) in relation to the current liabilities (liabilities falling due to one year).*" (Dluhošová et al., 2014, p. 81).

We can use examples to help us better understand the flow ratio. Luther is a leatherworking worker with 20 years of experience. He decided to open a small leather processing factory. He decided to apply for a loan from the bank to get the funds. Luther provided his financial statements to the bank, which would analyze Luther's financial status to evaluate the application. If Luther's current assets are 50,000 euros, the current liabilities are 10,000 euros. We can calculate the flow ratio of Luther and the result is $(50000 \div 10000 = 5)$. This result tells us that Luther's current assets are five times that of current liabilities, indicating that current assets can fully repay current liabilities. The bank will think that Luther's personal financial situation is good and low risk, and his loan application will succeed. The higher the current ratio, the easier it is for current assets to repay current liabilities and the higher the liquidity of funds.

"***Quick ratio*** *is more stringent measure of liquidity than the current ratio because it includes only the more liquid current assets. As the current ratio, a higher quickly liquidity ratio indicates greater liquidity. The quick ratio is computed as:*" (Dluhošová et al., 2014, p. 82).

$$Quick\ Ratio = \frac{current\ assets - inventories}{current\ liabilities}\ . \tag{2.13}$$

$$Quick\ Ratio = \frac{cash + accounts\ receivable}{Current\ liabilities}\ . \qquad (2.14)$$

"*The quick ratio reflects the face that certain current assets – such as prepaid expenses, some taxes and employee-related prepayments – represent the costs of the current period that have been paid in advance and cannot usually converted back into cash. This ratio also reflects the fact, that not all the inventory can be easily and quickly converted into cash and furthermore, that a company would probably not be able to sell all of its inventory for an amount equal to its carting value, especially if it were required to sell the inventory quickly. This implies that in situation in which the inventory is illiquid, the quick ratio can be a more suitable indicator of liquidity than the current ratio.*" (Dluhošová et al., 2014, p. 82).

We give examples to help us understand the quick ratio. Dave owns a meat processing plant and wants to buy new equipment to expand production to earn more. Dave wants to buy new equipment through a bank loan, and he wants the bank to provide financial statements. Dave's cash is 15,000 euros, accounts receivable is 6,000 euros, inventory is 5,000 euros, and current liabilities is 10,000 euros. We can calculate the quick ratio $(15000 + 6000) \div 10000$=2.1. This result tells us that we can pay all current liabilities through cash and accounts receivable, and there are many that can be left. The bank is willing to lend money to Dave.

***"Cash ratio** normally represents a reliable measure of an individual company's liquidity in a crisis situation. Only highly marketable short-term securities and cash are included in the calculation and are considered as the assets, which can be used to make payment. The cash ratio is computed as:" (Dluhošová et al., 2014, p. 82).*

$$Cash\ Ratio = \frac{cash + marketable\ securities}{current\ liabilities}\ . \qquad (2.15)$$

For the short-term period, the most important liquidity ratio is the cash ratio. Cash ratio used to measure a company's ability to repay its current liabilities only with cash and cash equivalents. Many creditors want to see if the company has enough cash to repay all of its existing debts when they mature. Like most liquidity ratios, higher cash means firms have more liquidity and can pay off their debts more easily.

We give examples to help us understand the cash ratio. Lili has a 10-year-old coffee shop. In order to attract more customers, Lili decided to renovate the coffee shop and purchase new

equipment. She filed a loan application with the bank and submitted the financial statements. She has cash and cash equivalents of 20,000 euros, accounts payable of 4,000 euros, short-term debt of 3,000 euros, and income tax payable of 2,000 euros. We can calculate ($20000 \div (2000 + 4000 + 3000) = 2.22$). This result means that Lili has enough cash and cash equivalents to pay current liabilities, and the bank is willing to lend her money.

2.3.3 Solvency Ratios

"*Solvency ratios to a company's ability to fulfil its long-term debt obligation. The assessment of a company's to pay its long-term obligations (i.e. to make interest and principal payments) generally include an in-depth analysis of the components of its financial structure. Solvency ratios provide information regarding the relative amount of liabilities in the company's capital structure and the adequacy of earnings and cash flow to cover interest expenses and other fixed charges as they become due.*" (Dluhošová et al., 2014, p. 77).

Solvency ratios include three basic ratios: debt ratio, debt-to-equity ratio and interest coverage.

"*Debt ratio* *focus on the balance sheet and measure the amount of debt capital relative to equity capital. This ratio measures the percentage of total assets financed with debt. Generally, a higher level of debt means higher financial risk and thus weaker solvency.*" **(**Dluhošová et al., 2014, p. 77-78**)**.

Debt ratio is computed as:

$$Debt\ ratio = \frac{Total\ liabilities}{Total\ assets}\ . \tag{2.16}$$

Debt ratios show that companies are able to repay their debts with their assets. In other words, it shows how much assets a company has to sell to pay off all its debts.

We can give an example to help us better understand the debt ratio. George saw the price of the house rise, so he wanted to buy a house as an investment. When the price of the house far exceeds the price at the time of purchase, George will sell the house for cash. Since George had a bank loan of 30,000 euros (not yet finished), his current total assets are 90,000 euros. George gave his financial statements to the bank, and the bank calculated that George's debt

ratio was 3. It means that the assets are three times the debt, and the bank can lend money to George because he has enough assets to repay the loan.

"***Debt-to-equity ratio*** *measures the amount of debt capital relative to equity capital. The interpretation is similar to the previous one, that is, a higher ratio generally means weaker solvency and vice versa.*" (Dluhošová et al., 2014, p. 81).

It is computed as:

$$Debt\ to\ equity = \frac{Total\ liabilities}{equity}\ . \tag{2.17}$$

Lower debt-to-equity ratios usually mean that debt and equity are at a relatively stable level, and companies need not worry about paying interest and principal. It means more stable business for the company. A company with a higher ratio means that the total debt is much higher than the total equity, and the risk of the company will be exposed.

Let's give an example to understand the company. A computer accessories research and development company, the company wants the bank to apply for a loan of 1 million euros for product development. A shareholder of a company invested 800,000 euros in the company. We can calculate the debt-equity ratio to be 1.25. This shows that the debt level of the company exceeds the equity level. We think it's a high-risk company.

"***Interest coverage*** *measures the time a company pays interest on its pre-tax profits. The higher the rate of interest repayment and the stronger the solvency, the more guaranteed the company can repay its debts (i.e. bank debts, bonds, bills, etc.) from its operating income.*" (Dluhošová et al. , 2014, p. 78).

Interest coverage is often used to assess the ability of a company's operating profit to meet its debt obligations (pay interest, repay debt principal). Interest coverage is computed:

$$Interest\ coverage = \frac{Operating\ profit}{interest\ paid}\ . \tag{2.18}$$

I give an example of interest coverage. Wayne has a small bread factory and his bread is mainly sold to local supermarkets. Wayne wants to expand his business, but it doesn't have the money to buy a new toaster. Therefore, he went to several banks with several financial

statements in recent years to try to obtain loans. Wayne's interest and pre-tax income is 60,000 euros, and her interest and taxes are 15,000 euros and 6,000 euros, respectively. The bank will calculate Wayne's interest coverage, and Wayne's interest coverage ratio is 4. This means that its income is four times more than his current interest. He is able to pay interest on his existing debt as well as the original payment. The bank is willing to lend him money because it shows that his company is at low risk and that his business is generating enough cash to repay the loan.

2.3.4 Activity Ratios

"*Activity ratio is also called asset utilization ratio or operational efficiency ratio. This category is designed to measure the extent to which a company manages various activities, especially the efficiency of managing various assets. Activity ratios are analyzed as indicators of continuous operating performance - how companies use assets effectively. These ratios reflect working capital management and effective management of long-term assets. Efficiency has a direct impact on liquidity, so some activity ratios can also be used to evaluate liquidity.*" (Dluhošová et al., 2014, p. 75).

Average collection period (ACP) measures the conversion of accounts receivables into cash. In a certain period of time, the shorter the turnover days, the greater the liquidity of accounts receivable. Average collection period is computed as:

$$ACP = \frac{Accounts\ receivable}{Revenues} \cdot 360\,. \tag{2.19}$$

*"This ratio enables the analyst to learn the company's true average collection period, which may differ significantly from its stated collection period." (*Robinson et al., 2011, p. 292*).*

**"*Accounts receivable turnover (ART)* indicates how efficiently a company manages its receivables. A relatively high receivable turnover ratio (and commensurately a low average collection period) indicates highly efficient credit and collection or that the company's credit or collection policies are too stringent.*" (Dluhošová et al., 2014, p. 76).

Accounts receivable turnover is computed as follows:

$$ART = \frac{Revenues}{Accounts\ receivable}\ . \tag{2.20}$$

I gave an example to help us understand better. Dan runs a wood processing plant. He sells the finished product to a local furniture company. Dan provides his own bank account to the furniture company. By the end of the year, Dan's balance sheet showed that the accounts receivable were 20,000 euros and the income statement showed a revenue of 80,000 euros. Dan's balance sheet last year showed a receivable of 10,000 euros. We calculate the accounts receivable turnover. The first step is to calculate the average receivables. Average accounts receivable can be calculated by starting and ending the accounts receivable balance. The average receivable is $((10000 + 20000) \div 2) = 15000)$. Finally, Dan's accounts receivable turnover rate this year is 5.33 times. Therefore, when Dan sells in the market, he needs an average of 68 days to recover cash from sales.

Inventory turnover (IT) is an efficiency ratio, which shows the effectiveness of inventory management by comparing sales costs and average inventory over a period of time. Inventory turnover is computed as:

$$IT = \frac{Costs\ of\ goods\ sold}{Average\ inventory}\ . \tag{2.21}$$

This has an example to help us understand the formula better. Mike is running a clothing business. This year, Mike's income statement shows that the cost of the goods is 3,000 euros. Mike's initial inventory is 3,000 euros, and at the end the inventory is 5,000 euros. Based on these data we can calculate the Inventory Turnover Ratio. The first step is to calculate the average inventory $((3000 + 5000) \div 2) = 4000)$. In the second part we calculate the Inventory Turnover Ratio. The result we got was 0.75. This meant that Mike sold only about three-quarters of the inventory during the year. This means that Mike needs 1 year plus 1 quarter to sell his entire inventory.

Total assets turnover (TAT) measures the ability of a company to generate sales revenue through its assets at the ratio of sales to total assets. So total asset turnover shows how companies can use their assets effectively to generate sales revenue. Total assets turnover is

computed as:

$$\text{TAT} = \frac{Revenues}{Total\ assets}\ . \tag{2.22}$$

We give an example to help us understand the formula. John has a network software company that has launched a new mobile phone software. John wants to get an investment, so he meets a potential investor. Investors want to know how John uses assets to generate sales, so investors ask him to provide financial statements. The following is the data reported in the financial statements: total assets of 100,000 euros, sales income of 250,000 euros. We get a result of 2.5 according to the formula. This means that for every 1 euro in the asset, John can produce 2.5 euros. This result tells us that John's total asset turnover is high and investors are happy to invest.

2.4 Dupont Analysis

"*That provided insight into earnings per share by disaggregating it into several simple financial ratios. Disaggregation can be applied in other beneficial ways in equity analysis, most notably in a technique known as the Du Pont Formula.*" (Robinson et al., 2011, p. 336).

"*Du Pont Formula enables investors to judge the quality of a company's return on equity in much the same way that other financial tests can be applied to the quality of earnings.*" (Robinson et al., 2011, p. 335).

DuPont analysis, also known as the DuPont model, is defined according to the rate of return on equity. It is usually used to analyze a company's ability to increase returns on equity. DuPont's analysis focuses on three main components of ROE ratio: net profit margin, total assets turnover and turnover financial leverage.

We can take an example to understand DuPont Company Law. First of all, we know that ROE can be divided into three basic components: net profit margin, total assets turnover and turnover financial leverage. Through these ratios, we can know which aspect of the company is insufficient. We assume that there are two local steel producers, Company A and Company B. The relationship between them is oligopoly. We assume that the return on equity of the two companies is the same as 40%, and the other financial ratios are shown in the table. 2.4 below. We try to analyze the production and operation of the two companies.

Tab. 2.4 Financial ratios of companies A and B

Finance ratios	Company A	Company B
Net profit Margin	20%	40%
Financial Leverage	50%	4
Total Asset Turnover	4	25%

The operation of the two companies can be seen in detail in Tab. 2.4. The formula is based on (2.24).

$$\text{ROE (Company A)} = 20\% \cdot 50\% \cdot 4 = 40\%$$

$$\text{ROE (Company B)} = 40\% \cdot 4 \cdot 25\% = 40\%$$

The operation of the two companies can be seen in detail in Tab. 2.4. For the net profit margin, Company B is better than Company A because it is more efficient to convert company B sales revenue into net profit. For financial leverage A company is better than company B, because the higher the financial leverage, the higher the proportion of debt assets in total assets (as explained in the next chapter), the higher the company's debt also means (the debt itself has to be repaid) Paying more interest, usually we think it is a high risk. For the total asset turnover rate, Company A is better than Company B. This is because the total asset turnover rate is the ability of the company's assets to be converted into sales revenue. The higher the total asset turnover rate, the more efficient the ability of assets to convert into sales revenue. For the two companies with the same return on equity, we know that some operations are good or bad, but we can achieve good results through mutual compensation. It is for this reason that DuPont analysis is considered one of the most important financial analysis methods.

For the mentioned ROE split essence is the pyramid decomposition of the ROE, we can propose it in the next section.

2.4.1 Pyramidal decompositions

"The Profitability ratio are the key ratio to analyze the company's financial performance. They are influenced by corporate leverage and liquidity and corporate activities. The evolution of these ratios is also influenced by many other key factors. This is why financial analysis needs to analyze the causes of financial performance changes in-depth and quantify their impact on these changes. On the basis of the results, appropriate improvement decisions can be made." (Dluhošová et al., 2014, p. 89).

"The basic idea of pyramid decomposition is to gradually decompose the alkaline ratios as a product of component ratios, and then evaluate how these component ratios affect the basic ratios." (Dluhošová et al., 2014, p. 89).

The first step in using DuPont analysis is to use pyramid decomposition to decompose ROE. ROE is expressed as:

$$ROE = \frac{EAT}{Equity} = \frac{EAT}{Revenues} \cdot \frac{Revenues}{Total\ assets} \cdot \frac{Total\ assets}{Equity} . \quad (2.23)$$

In this formula, $\frac{EAT}{Revenues}$ is net profit margin , $\frac{Revenues}{Total\ assets}$ is assets turnover, and $\frac{Total\ assets}{equity}$ is financial leverage. In addition, this pyramid decomposition can analyze the company's past, present and future performance.

Another form of expression of ROE:

$$ROE = \frac{EAT}{Revenues} = \frac{EAT}{EBT} \cdot \frac{EBT}{EBIT} \cdot \frac{EBIT}{Revenues} \cdot \frac{Revenues}{Total\ assets} \cdot \frac{Total\ assets}{Equity}. \quad (2.24)$$

"*It follows from above that the return on equity (ROE) is affected by taxes and their effect on the profit, borrowing costs, operating profitability, overall efficiency of the company and total amount of the company's assets relative to its equity capital.*" (Dluhošová et al., 2014, p. 90).

2.4.2 Influence quantification

Ability to analyze indicators, and their changes lead to changes in basic ratios. Quantification, how the constituent ratio affects the charge of the basic ratio. Then we will introduce four quantification methods: gradient method, logarithmic decomposition method, functional decomposition method and integration method.

Methods of gradual is the absolute change in the composition ratio. The number of component ratios = the number of equations that affect quantification (each equation is used for a given component ratio). Advantages: It can be applied regardless of the positive or

negative values of component proportion or basic proportion. Disadvantage: The order of decomposition affects the results. For example, there are three component ratios:

$$\Delta X a_1 = \Delta a_1 \cdot a_{2,0} \cdot a_{3,0}$$
$$\Delta X a_2 = a_{1,1} \cdot \Delta a_2 \cdot a_{3,0}$$
$$\Delta X a_3 = a_{1,1} \cdot a_{2,1} \cdot \Delta a_3. \quad (2.25)$$

In this formula, (x) is basic ratio; (ΔX) is absolute change in the basic ratio; (a) is component ratio; (Δa) is absolute change in the component ratio; ($\Delta X a_1$) is absolute change in the basic ratio casued by the change in the first (a_1) component ratio.

Logarithmic decomposition method works with logarithmic. Advantage: no matter how many components we have, we only need a formula that affects quantification. The impact of component is computed as:

$$\Delta X a_1 = \frac{ln\, I a_1}{ln\, I_x} . \quad (2.26)$$

In this formula, (x) is basic radio; (ΔX) is absolute change in the basic ratio; ($\mathrm{I_X} = \frac{\mathrm{X_1}}{\mathrm{X_0}}$) is the index of change in basic ratio; ($I_a = \frac{a_{i_1}}{a_{i_0}}$) is the index of change in component ratio.

Functional decomposition method is suitable for the relative change of basic ratio and component ratio. Whatever signs of relative change apply. So:

$$\Delta X = R_X = \frac{X_1 - X_0}{X_0} . \quad (2.27)$$

$$\Delta a = R a_1 = \frac{a_1 - a_0}{a_0} . \quad (2.28)$$

The influence of the ratio of three components on the basic ratio (the effect of the ratio of three components). The calculation is as follows:

$$\Delta X a_1 = \frac{R_{a_1}}{R_x} \cdot \left(1 + \frac{1}{2} R_{a_2} + \frac{1}{2} R_{a_3} + \frac{1}{3} R_{a_2} \cdot R_{a_3}\right) \cdot \Delta x$$

$$\Delta Xa_2 = \frac{R_{a_2}}{R_x} \cdot \left(1 + \frac{1}{2}R_{a_1} + \frac{1}{2}R_{a_3} + \frac{1}{3}R_{a_1} \cdot R_{a_3}\right) \cdot \Delta x \,. \tag{2.29}$$

$$\Delta Xa_3 = \frac{R_{a_3}}{R_x} \cdot (1 + \frac{1}{2}R_{a_1} + \frac{1}{2}R_{a_2} + \frac{1}{3}R_{a_1} \cdot R_{a_2}) \cdot \Delta x$$

In this formula, (R_X) equal (ΔX) is percentage change in the basic ratio; (R_{a_1}) equal (Δa) is percentage change in the component ratio; (ΔXa_1) can be calculated by formula (2.30).

Integral decomposition method is similar to functional decomposition method. In the case of decomposing the proportion of three components.

$$\Delta Xa_1 = \frac{R_{a_1}}{R_{x^*}} \cdot \Delta X, \qquad \Delta Xa_2 = \frac{R_{a_2}}{R_{x^*}} \cdot \Delta X, \qquad \Delta X = \frac{R_{a_3}}{R_{x^*}} \cdot \Delta X \,. \tag{2.30}$$

And (R_{x^*}) is computed as:

$$R_{x^*} = \sum_{j=1}^{N} R_{a_j} \,. \tag{2.31}$$

The results of these four quantitative impact methods are the same if the same set of ratios is used. So we can choose different methods to evaluate the quantitative impact of financial ratios.

3. Characteristics of Coca-Cola company

In this chapter, we will introduce Coca-Cola in detail. First, we will introduce the basic information and company history of Coca-Cola. Next, we will focus on the advantages and disadvantages of company management and product competition. Finally, we use Coca-Cola's annual report data to analyze the company by using common-size analysis, which includes vertical common-size analysis and horizontal common-size analysis.

3.1 History of Coca-Cola company

The Coca-Cola Company, founded on May 8, 1886, is headquartered in Atlanta, Georgia, USA. It is the largest beverage company in the world. It has 48% market share and two of the top three beverages in the world (Coca-Cola ranks first, Pepsi second, low calorie Coca-Cola third), and Coca-Cola is in 200 countries. It has 160 beverage brands, including soda, sports drinks, dairy drinks, fruit juices, tea and coffee. It is also the world's largest distributor of juice drinks (including the Minute Maid brand). Coca-Cola, ranked No. 1 in the United States, has more than 40% market share, while Sprite is the fastest growing beverage.

The development concept of the Coca-Cola Company has always conveyed a positive attitude to peoples. *"Positive and optimistic life" reflects our commitment to actively change the world，and integrates the concept of sustainable development in everything by improving our work and lifestyle. This is our unwavering belief. The Coca-Cola Company and the bottling partners are committed to long-term, positive change that will have a positive impact on the world. We continue to innovate, enabling our business to create value for the communities we serve in the environment and economically. We believe that while we strive to promote economic, environmental and social sustainability, our business will also achieve sustainable development.*

Coca-Cola has many selling points. In addition to its advertising, formula, public welfare, packaging and other attractions, investment guru Buffett is an indispensable protagonist in its financial story. Coca-Cola stock is still Buffett's Berkshire's largest investment. Buffett's investment in Coca-Cola was a great success. In his own words, "What can be more rewarding than investing in a good company?" [2]

[2] Source: https://www.coca-cola.com.cn/our-company

3.2 Structures of Coca-Cola Company

Board of directors

As the highest decision-making level of the company, the board of directors has the function of determining the company's operation direction and responsible for managing the company. Coca-Cola holds a general meeting of shareholders every February to disclose the financial statements of the previous year. Now, there are five independent directors (independent directors are directors who are independent of the company's shareholders and who do not hold positions within the company but make independent judgments on the company's affairs.) One of the most familiar ones is Mr. Howard G. Buffett. The board of consists of five independent directors and 13 major shareholders, and the CEO is James Robert B. Quincey.

Company management

"Coca-Cola is a strategist in implementing the fine management of financial resources. Its management ideas and methods can be summarized as "five essence". One is the "essence": the "3P" strategy. Pervasive (everywhere) makes Coca-Cola products everywhere. Piece relative to value (value for money) makes Coca-Cola's price performance popular among people. Preferred makes Coca-Cola the first choice for consumers. The "3P" strategy laid a cultural foundation for Coca-Cola's efficient allocation of financial resources.

After assessing employees, we should also use various methods to motivate employees. Strengthening work motivation and establishing employee incentives can improve employee performance and induce employee enthusiasm. Coca-Cola will take certain measures to motivate employees, including material incentives and non-material incentives, after employees' assessments and evaluations for employees' daily or monthly work priorities.

The coordination ability in the internal management control system and distribution process of financial resources is an important factor affecting the efficiency of financial resources allocation. Enterprises need to establish a sound and rigorous internal control system of financial resources based on reality, and deal with the relationship between internal control system and professional ethics and self-discipline, control cost and control efficiency, traditional internal control mode and new internal control mode."[3]

[3] Source: https://www.coca-cola.com.cn/our-company

3.3 Competition

Coca-Cola's biggest competitor is undoubtedly Pepsi. The company not only has great similarity with Coca-Cola, but also has the closest international status to Coca-Cola. In contrast, Coca-Cola's advantage lies in its owner. A strong marketing network and distribution system is something that other beverage companies can't do it.

The competitive advantage of the Coca-Cola Company is as the world's largest soft drink giant, it has the advantages of a large factory and a strong global competitiveness. Its brand image is deeply rooted in people's hearts and has become a part of consumer life. The mysterious formula of core products is extremely confidential, making it popular after 100 years of popularity. At the same time, strong marketing capabilities, systems and corporate advertising, the company's channel construction is also quite complete. Globally, consumers in more than 200 countries enjoy more than 1.6 billion Coca-Cola products daily through the world's largest distribution system. The bright future of the beverage market has also made more and more companies want to enter the market to share a piece of cake. Coca-Cola and PepsiCo in carbonated beverages, other beverage markets such as Master Kong and Uni-Pres are competing with potential competitors. Typical of the imitation, Coca-Cola is a leader in the beverage industry. Although Coca-Cola has its unique formula, it still needs to be vigilant against these potential threats.

The competitive disadvantage of the Coca-Cola Company.is Coca-Cola is the largest beverage company in the world, and its large size determines its demand for materials. Therefore, suppliers have relatively weak bargaining power for Coca-Cola. It is hard to imagine which supplier is willing to lose such a big Coca-Cola. Buyers, a few years ago, the supplier's bargaining power has a relatively small impact on the Coca-Cola Company. However, in recent years, the price of aluminum, plastics, oil, etc. has risen sharply, which has doubled the cost of raw materials for Coca-Cola. This has made many raw material suppliers who have cooperated with Coca-Cola for a long time, and it is difficult to continue to supply. Some suppliers have even unilaterally destroyed the contract due to their inability to perform, which has brought unpredictable losses to the Coca-Cola Company. The bargaining power has increased.

3.4 Common-size Analysis of Coca-Cola Company

Common-size analysis is the analysis of the changes of the data which are from financial statement over time. In this part, we will describe Coca-Cola company by common-size analysis from 2014 to 2017 in order to identify the trends and main difference of the data from Coca-Cola company's financial statements during a year. From the balance sheet of Coca-Cola company, we can see that total assets and total equity declined between 2014 and 2017, and total liabilities have been rising. We will analyze why these items change in the following sections.

For the calculation of the data which we used in common-size analysis, we simplified the balance sheet and income statement of Coca-Cola company. The simple balance sheet of Coca-Cola company is in Tab. 3.1. The simple income statement of Coca-Cola company is in Tab.3.2.

Tab. 3.1: Balance sheet of Coca-Cola from 2014 to 2017(USD-Billion).

	2017	2016	2015	2014
Long-term assets	51.351	53.26	56.698	59.037
Current assets	36.545	34.01	33.395	32.986
Total assets	87.896	87.27	90.093	92.023
Long-term liabilities	41.725	37.518	37.399	29.088
Current liabilities	27.194	26.532	26.93	32.374
Total liabilities	68.919	64.05	64.329	61.462
Total equity	18.977	23.22	25.764	30.561

Source: Coca-Cola company Annual Reports.

From Coca-Cola's balance sheet in 2014 to 2017, we can see that total assets fell from $92.023 billion in 2014 to $87.27 billion in 2016. Total assets increased slightly from $87.27 billion in 2016 to $87.896 billion in 2017. Coca-Cola's total liabilities increased from $61.462 billion to $6.891.9 billion in 2014-2017, indicating that the company sought financing through debt. Coca-Cola's total equity decreased from $30.561 billion in 2014 to $1.897.7 billion in 2017, a slightly dramatic reduction, suggesting that investors were reluctant to provide cash support for its operations. According to formula (2.1), we can see that the proportion of total liabilities in total assets is higher and higher, while the proportion of total equity is smaller and

smaller, which means that the company has entered a high level of financial leverage.

From Coca-Cola's profit statement for 2014 to 2017, we can see that total sales revenue decreased from $46.030 billion to $3.501.6 billion from 2014 to 2016. There are mainly changes in consumer awareness (carbonated drinks are labeled unhealthy). Coca-Cola's sales cost decreased from $17.99 billion in 2014 to $1.330.3 billion in 2017, mainly because (Coca-Cola sold its shares in its bottled business to its partners, Coca-Cola only provided raw pulp, reducing inventory and transportation costs), which is good news for the company. Coca-Cola's gross profit fell from $28.013 billion to $21.171.3 billion in 2014-2017, a slightly dramatic reduction. Coca-Cola's net profit decreased from $6.818 billion to $1.179.3 billion in 2014-2017. The reason for the low net profit in 2017 was that the corporate income tax in 2017 was three times that in 2016 due to the impact of tax policies.

Tab. 3.2: Income statement of Coca-Cola from 2014 to 2017(USD-Billion).

	2017	2016	2015	2014
Revenues	35.016	41.379	43.7	46.003
Cost of sold goods	13.303	16.622	17.396	17.99
Gross profit	21.713	24.757	26.304	28.013
Operating expenses	12.5496	15.502	16.605	17.775
Operating profit	9.1634	9.225	9.699	10.238
Profit before tax	6.7394	8.027	9.504	9.019
Net profit	1.1793	6.441	7.265	6.818

Source: Coca-Cola company Annual Reports

3.4.1 Vertical Common-size Analysis of Coca-Cola Company

Through vertical common-size analysis, we choose total assets, total liabilities and equity, and income as our benchmarks. Then we need to calculate the percentage of each item in the benchmark.

First, we choose total assets as the benchmark. Therefore, the proportion of total assets is 100%. So we can calculate the proportion of long-term assets and current assets in total assets. The following table. 3.3 is the proportion of each project in total assets.

We can see from Tab. 3.3 and Chart. 3.1 that the proportion of total long-term assets decreased from 2014 to 2017 and total current assets increased from 2014 to 2017. The main reason is the long-term assets of equipment and land are decreasing. On the other hand,

intangible assets are greatly reduced. Although the amount of investment is increasing every year. At the same time, especially other current assets are greatly increased, which increases the proportion of current assets.

In addition, long-term assets have always been greater than current assets, but the gap has been decreasing year by year. The greater the proportion of current assets, the greater the liquidity of assets, and the greater the current assets, the greater the increase in short-term debt repayment ability. We can see that cash and cash equivalents are increasing year by year, so company need to invest these cash in some high-profit plans and get more profit.

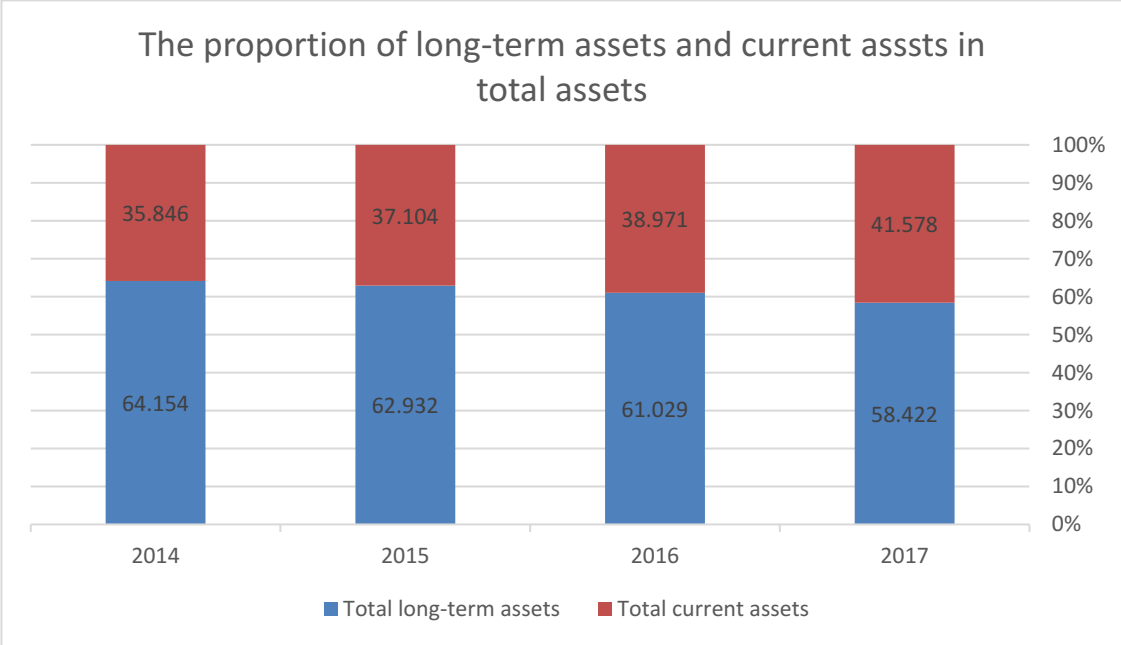
Tab. 3.3: The proportion of each item in total assets (%).

	2017	2016	2015	2014
Property, plant and equipment	9.333	12.186	13.953	15.901
Intangible assets	18.827	24.21	26.786	28.658
Investment property	26.428	21.157	18.654	15.967
Deferred tax assets	0.377	0.374	0.4	0.347
Total long-term assets	58.422	61.029	62.932	64.154
Inventories	3.02	3.065	3.221	3.369
Trade and other receivables	4.172	4.418	4.374	4.853
Prepaid expenses	18.776	18.362	17.544	24.648
Derivative financial assets	10.863	6.048	7.383	4.079
Cash and cash equivalents	23.522	25.439	22.088	23.554
Total current assets	41.578	38.971	37.104	35.846
Total assets	100	100	100	100

Source: Coca-Cola company Annual Reports

By analyzing the percentage of each financial item in Coca-Cola's balance sheet in total assets from 2014 to 2017. We can get which financial project has the greatest impact on assets. Among the long-term assets, intangible assets and investment assets support total assets. In current assets, cash and cash equivalents support total assets.

Chart. 3.1: The proportion of long-term assets and current assets in the total assets.



Then we can choose total liability and equity as benchmark. The following Tab. 3.4 is the proportion of each item in total liability and equity. And Chart. 3.2 is the proportion of liability and equity.

Tab. 3.4: The proportion of each item in total liability and equity (%).

	2017	2016	2015	2014
Long-term liabilities	47.471	42.991	41.512	31.609
Current liabilities	30.939	30.402	28.891	35.180
Total liabilities	78.41	73.393	71.403	66.79
Total equity	21.59	26.607	28.597	33.21
Total liabilities and equity	100	100	100	100

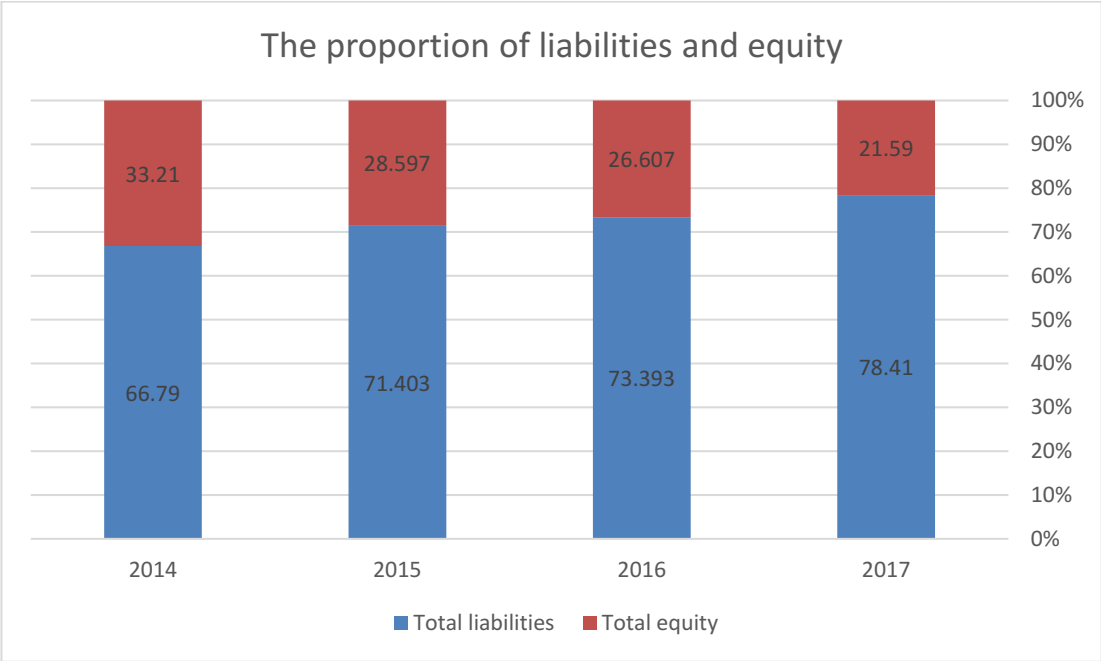
Source: Coca-Cola company Annual Reports

We can see from Table 3.4 that the total liabilities increased from 2014 to 2015, and the total liabilities decrease in a small range from 2015 to 2016, but the total liabilities increased substantially from 2016 to 2017. We can see that total liabilities increased by about $7 billion between 2014 and 2017.

The proportion of long-term liabilities has been increasing from 2014 to 2017. The proportion of current liabilities has been in a state of flux. In the early stages, current liabilities are greater than long-term liabilities, so the cost is low and the financial risk is low. Later long-term liabilities are greater than current liabilities, high costs, high financial risk, and high cash

use restrictions.

Chart. 3.2: The proportion of liability and equity (%).



The total equity of the Coca-Cola Company is steadily decreasing, which means that investment is decreasing and profits are beginning to decrease. But the equity is still below the debt. The Coca-Cola Company needs to upgrade itself to attract more people to invest. At the same time, the short-term load has been greatly reduced from 2014 to 2015. In 2015, Coca-Cola decided to reduce production costs and increase profits.

Tab. 3.5: The proportion of each item in revenue (%).

	2017	2016	2015	2014
Revenue	**100**	**100**	**100**	**100**
Cost of sales	37.991	40.17	39.808	39.106
Gross profit	**62.009**	**59.830**	**60.192**	**60.894**
Other income	4.775	4.742	4.737	2.439
Administrative expenses	35.838	37.200	37.767	37.974
Operating profit	**26.169**	**22.366**	**22.195**	**22.255**
Financial expenses	2.150	1.653	1.195	1.113
Net profit before income tax	**19.247**	**19.399**	**21.748**	**19.605**
Tax	15.878	3.833	5.124	4.784
Net profit	**3.368**	**15.510**	**16.590**	**14.764**

We can see from Table 3.5 that gross profit has been declining from 2014 to 2017. Gross

profit accounted for about 60% of revenue, and cost accounted for about 40% of revenue. However, data shows that operating costs are decreasing every year from 2014 to 2017, indicating that Coca-Cola's internal reforms have been effective and production costs have been control

Operating profit is volatile, and operating profit as a percentage of revenue is approximately 23%, which may be due to excessive sales and marketing expenses and administrative expenses. In 2014, Coca-Cola focused on the internal reform of the business. Although it cost a lot of money, Coca-Cola can get a lot of benefits. I don't think that spending a lot of marketing expenses is a serious problem because companies need to increase their reputation and let more people know about them. Advertising costs will pay off well. Administrative costs are also necessary. When the company develops to a certain scale, it can reduce operating expenses.

Financial expenses have increased slightly every year, and tax expenses have been relatively stable from 2014 to 2016, but suddenly increased in 2017. Due to the above reasons, the proportion of net profit in 2017 to income is low. The ratio of net profit to income has increased from 2014 to 2015, and it is necessary to grasp the development trend.

3.4.2 Horizontal common-size analysis of Coca-Cola Company

Evaluate financial statements data using horizontal common size-analysis. The first step is to calculate the absolute change in each item of the balance sheet and income statement. The second step calculates the percentage change based on each absolute change with each previous year as the benchmark. To analyze the development trend of the Coca-Cola Company.

First, we can analysis the balance sheet. Tab.3.6 is absolute change of each item in balance sheet. The following Tab. 3.7 is. percentage change of each item in balance sheet. (%)

Tab. 3.6: The absolute change of each item in balance sheet (USD-Billion).

	2016/2017	2015/2016	2014/2015
Long-term assets	-1.909	-3.438	-2.339
Current assets	2.535	0.615	0.409
Total assets	**0.626**	**-2.823**	**-1.93**
Long-term liabilities	1.498	1.277	9.344
Current liabilities	0.662	-0.398	-5.444
Total liabilities	**4.869**	**-0.279**	**2.867**
Total equity	**-4.243**	**-2.544**	**-4.797**

According to Tab. 3.6 and Tab. 3.7, we can see that long-term assets have been decreasing from 2014 to 2017. Current assets have been increasing from 2014 to 2017. The reason is that property, plant and equipment decreased from 2014 to 2017, and intangible assets also fluctuated according to this trend. Investment properties decreased from 2014 to 2017 and held a fixed amount. Inventories as a whole showed a downward trend, with cash and cash equivalents showing an upward trend.

Tab. 3.7. percentage change of each item in balance sheet. (%)

	2016/2017	2015/2016	2014/2015
Long-term assets	-3.584	-6.064	-3.962
Current assets	7.454	1.842	1.240
Total assets	**0.717**	**-3.133**	**-2.097**
Long-term liabilities	5.046	4.495	49.016
Current liabilities	2.495	-1.478	-16.816
Total liabilities	**7.602**	**-0.434**	**4.665**
Total equity	**-18.273**	**-9.874**	**-15.696**

Long-term liabilities have been decreasing from 2014 to 2017, and the rate of change in long-term liabilities has been fluctuating. Current liabilities are increasing every year. The reason is that long-term debt fluctuates greatly. Short-term debt has decreased from 2014 to 2015, and the rate of change is relatively large. It has increased from 2015 to 2017, but the rate of change is stable. Short-term debt has the advantage of lower interest rates and stable supply and repayment of funds.

The downside is that they do not meet the long-term needs of the company. At the same time, due to the fixed interest rate of short-term loans, the company's interests may be affected by interest rate fluctuations.

The advantage of long-term debt is the rapid fundraising and flexibility. The disadvantages are financing risks and a large number of restrictions on the amount of funds. So properly adjust long-term debt and short-term debt. Total assets showed a steady upward trend, total liabilities showed an upward trend, and total equity also showed a downward trend. This is the main trend of the Coca-Cola Company's financial statement program.

Then we can analyze the income statement. Tab.3.8 is absolute change of each item in income statement Tab.3.9 is percentage change of each item in income statement.

Tab. 3.8: The absolute change of each item in income statement (USD-Billion).

	2016/2017	2015/2016	2014/2015
Revenues	**-6.363**	**-2.321**	**-2.303**
Cost	-3.319	-0.774	-0.594
Gross profit	**-3.044**	**-1.547**	**-1.709**
Operating expenses	-2.952	-1.103	-1.170
Operating profit	**-0.092**	**-0.444**	**-0.539**
Financial expenses	0.069	0.162	0.010
Profit before tax	**-1.288**	**-1.477**	**0.485**
Net profit	**-5.239**	**-0.832**	**0.458**

Tab. 3.9: The percentage change of each item in income statement (%)

	2016/2017	2015/2016	2014/2015
Revenues	**-15.377**	**-5.311**	**-5.006**
Cost	-19.968	-4.449	-3.302
Gross profit	**-12.296**	**-5.881**	**-6.101**
Operating expenses	-19.045	-6.643	-6.582
Operating profit	**-0.990**	**-4.578**	**-5.265**
Financial expenses	10.088	31.034	1.953
Profit before tax	**-16.041**	**-15.541**	**5.378**
Net profit	**-81.625**	**-11.476**	**6.743**

We can see from Tab 3.8 and Tab 3.9 that revenue has been decreasing from 2014 to 2017. Since the cost has been decreasing, but the rate of absolute change of total revenue has always been greater than the rate of absolute change of cost, the gross profit is also decreasing. It shows that Coca-Cola has sold more goods in recent years and they are trying to cut costs to get more profit. From a financial point of view, 2017 is a challenging year, as the net profit has changed significantly from the previous years due to the increase in tax expenses.

Financial expenses have been increasing from 2014 to 2017, but the rate of change in financial expenses has been fluctuating. Due to the above projects, the net profit is in the rising stage from 2014 to 2015, and then starts to decline again from 2015 to 2016. In 2017, the decline reached a minimum of 1.179 billion US dollars. From 2016 to 2017, the net profit decreased by about 80%.The reason is that in 2017, Coca-Cola spent more on tax expenses, resulting in a significant reduction in net profit.

4 Financial Analysis of Coca-Cola Company

In this chapter, we will use financial ratio analysis to analyze the operation of the Coca-Cola Company. There are five ratios: profitability, liquidity ratio, solvency ratio, and activity rate, each of which is linked to two financial table data. By breaking the ROE into 3 parts. Finally, we will use DuPont analysis to analyze the Coca-Cola Company. Through these methods, we can analyze Coca-Cola more carefully and in-depth.

4.1 Profitability Ratios of Coca-Cola Company

The profitability ratio compares the items in the income statement to show the company's ability to profit from its operations. Profitability is concerned with the return on inventory and other assets invested by the company. These ratios basically show that companies can make profits from their operations.

4.1.1 Operating Profit Margin.

Operating profit margin of Coca-Cola company from 2014 to 2017 is shown in Tab. 4.1 and Chart. 4.1. It is calculated according to the formula (2.10).

Tab. 4.1: Operating profit margin of Coca-Cola company (USD-Billion).

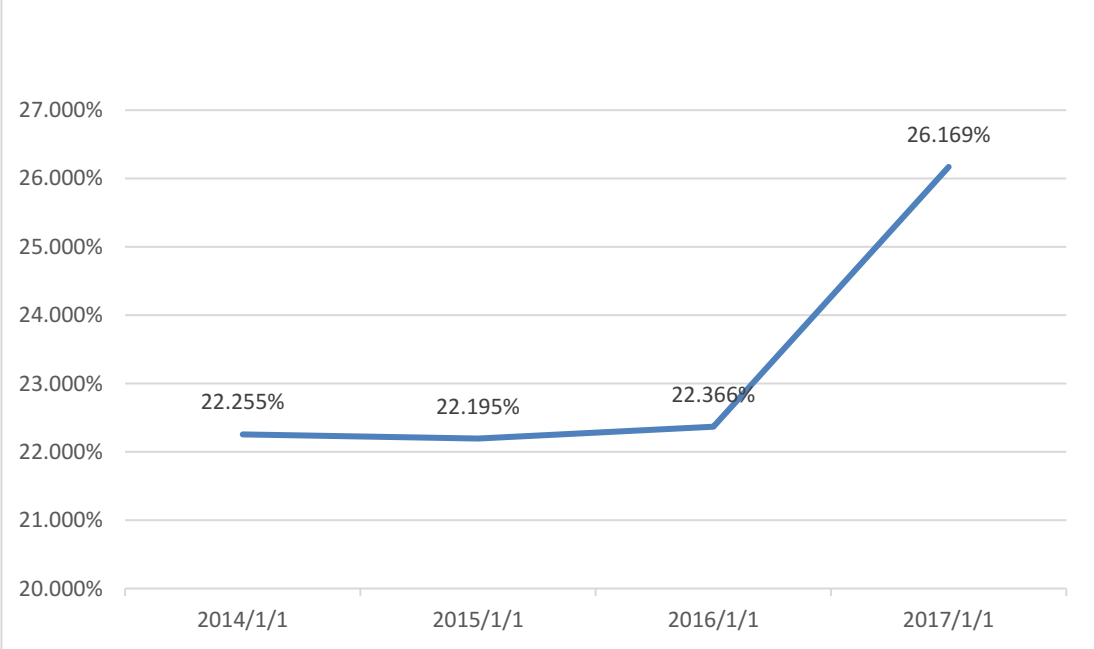
	2017	2016	2015	2014
Operating profit	9.1634	9.255	9.699	10.238
Revenue	35.016	41.379	43.7	46.003
Operating profit margin	26.169%	22.366%	22.195%	22.255%

"*Operating profit margin refers to the ratio of operating profit to company's operating income. In other words, operating profit margins indicate the remaining revenue after all variable or operating costs have been paid. The higher the operating profit margin is, the more commercial profit the merchandise sales provide, the stronger the profitability of the company.*"[4] From Tab. 4.1 and chart. 4.1 We can see that from 2014 to 2016, Coca-Cola's

[4] https://www.myaccountingcourse.com/financial-ratios/operating-margin-ratio

operating profit margin has been fluctuating, but the fluctuation tends to stabilize at about 22%. In 2017, Coca-Cola's operating profit margin increased to 26.169%. This also means that the company relies on operating revenue.

Chart. 4.1: Operating profit margin of Coca-Cola company.



We can see from Tab. 4.1 that the operating profit margin has not exceeded 30% from 2014 to 2017. This shows that the Coca-Cola Company did not get enough revenue from normal operations, and its operations and revenue generated insufficient support for the company. Companies will have to find a new source of income. In 2014 to 2016, the company's operating profit margin remained at 22%. This means that every dollar of income is only 22 cents after the payment of operating expenses, and the remaining 22 cents to pay non-operating expenses. For 2017, Coca-Cola's operating margin was 26.169%, which was due to the significant decrease in sales revenue in 2017, which led to an increase in operating profit margin.

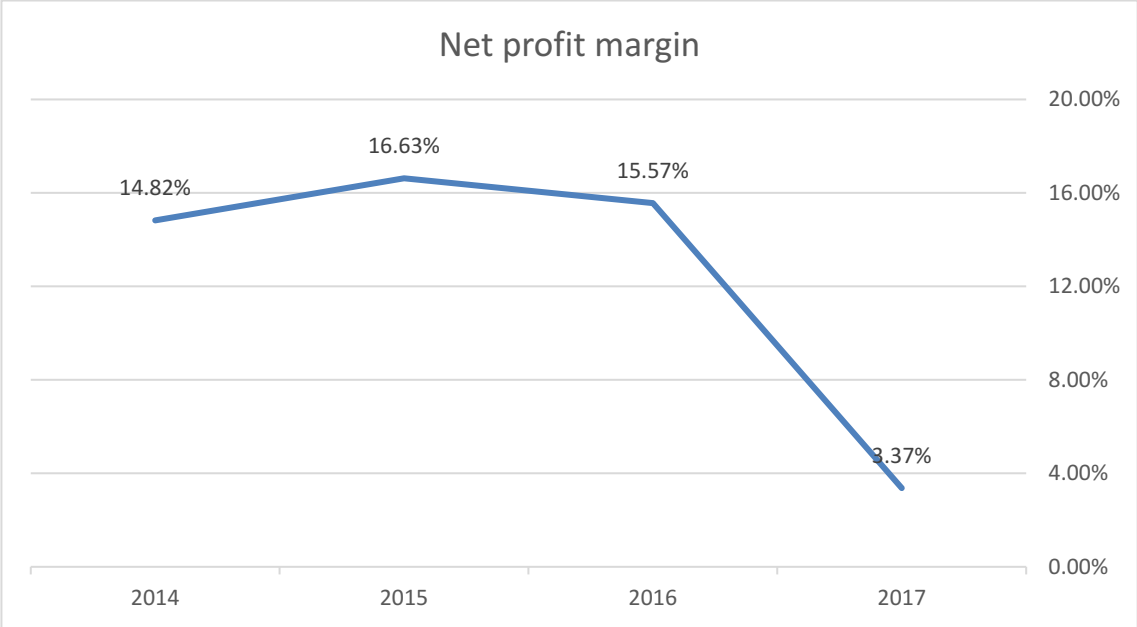
4.1.2 Net Profit Margin

Net profit margin. The percentage of a dollar earned by a business is ultimately the year-end profit, which shows the net income of a business for every dollar sold. Net profit margin of Coca-Cola company from 2014 to 2017 is shown in Tab. 4.2 and Chart. 4.2. It is calculated according to the formula (2.11).

Tab. 4.2: Net profit margin of Coca-Cola company (USD-Billion).

	2017	2016	2015	2014
EAT	1.1794	6.441	7.265	6.818
Revenue	35.016	41.379	43.7	46.003
Net profit margin	3.368%	15.566%	16.625%	14.821%

Chart. 4.2: Net profit margin of Coca-Cola company.



The higher the net profit margin, the higher the profitability of the company. We can see it from Tab. 4.2 and chart. 4.2 From 2014 to 2015, the net profit margin increased. From 2015 to 2016, there was a slight decline. From 2016 to 2017, the decline was significant, about 80%.

In 2017, the bleak net profit was also related to the sudden increase in income tax expenses under the influence of the policy. In 2017, Coca-Cola income tax expenses increased to 5.56 billion dollar, which was three times the sales revenue in 2016. Therefore, the net profit margin in 2017 reached the lowest level in history in recent years. It was an unpleasant year for Coca-Cola in 2017, and the company faced pressure from shareholders and changes in consumer ideology (mainly because carbonated drinks were labeled as unhealthy).

Next, we will analyze why Coca-Cola's net profit margin has been steadily fluctuating from 2014 to 2016. First of all, we got a message from the Coca-Cola Company to “sell the bottling business and maintain the gross profit margin”. In the face of declining operating income, Coca-Cola stripped a portion of the filling business in North America and sold the

bottled business to its partners. Coca-Cola only needed to provide concentrated pulp to the bottle factory, thus reducing its standardization, transportation and distribution. the cost of. Because this policy is the reason why Coca-Cola's gross profit margin has remained at 60% and net profit margin has remained at 15% in recent years.

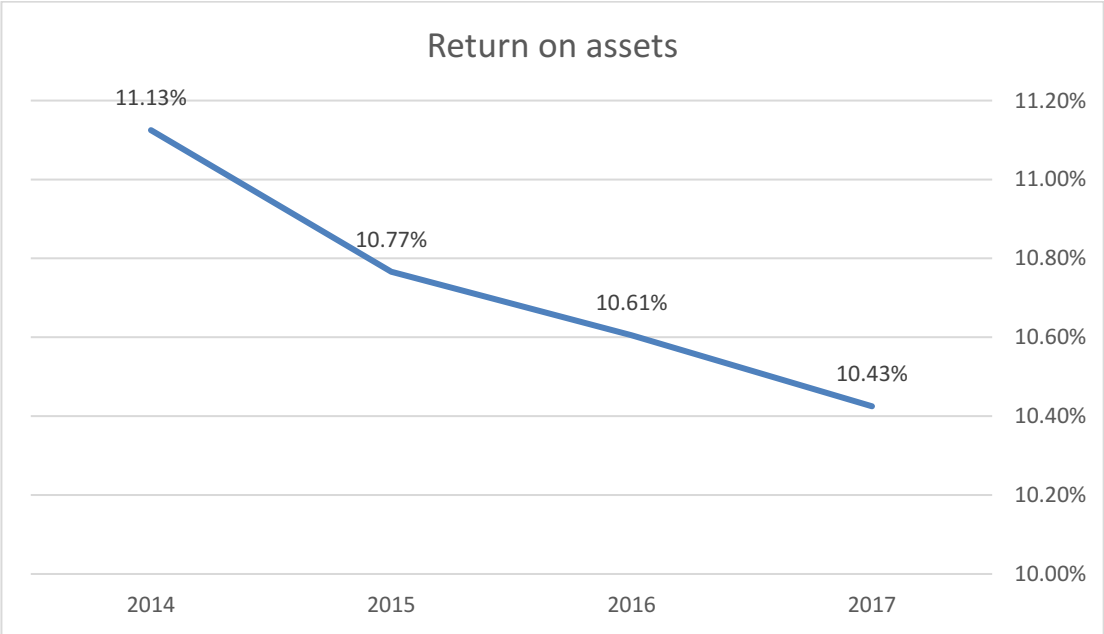
4.1.3 Return on Assets

The rate of return on assets, commonly referred to as the rate of return on total assets, is a profit rate, which measures the net income generated by total assets over a period of time by comparing net income with average total assets. Return on assets of Coca-Cola company from 2014 to 2017 is shown in Tab. 4.3 and Chart. 4.3. It is calculated according to the formula (2.12)

Tab. 4.3: Return on assets of Coca-Cola company (USD-Billion).

	2017	2016	2015	2014
Operating profit	9.1634	9.255	9.699	10.238
Assets	87.896	87.27	90.093	92.023
Return on assets	10.425%	10.605%	10.766%	11.125%

Chart. 4.3: Return on assets of Coca-Cola company



The rate of return on assets is the ratio of operating profit to company assets. The higher

the rate of return on assets, the higher the efficiency of using corporate assets to create more profits, the stronger the profitability of the company, and the higher the management level of the company. On the other hand, the lower the rate of return on assets, the lower the efficiency of asset utilization, the lower the profitability of the company, and the lower the level of enterprise management.

We can see from Tab.4.3 and Chart.4.3 The return on assets continued to decline from 2014 to 2017, but the decline was not large, and the return on assets remained at 10.5%. Return on assets measures how effectively a company manages its assets over a period of time to generate profits. Only a higher ratio is more beneficial to investors because it shows that companies manage their assets more efficiently to generate greater net income. We use the 2014 data year to get a net income of 11 cents when you use $1 in assets this year. In 2015, you will generate a net income of 10.7 cents when you use 1 dollar of assets. In 2016, when you use 1 dollar of assets, you will generate a net income of 10.6 cents. In 2017, when you use 1 dollar of assets It will generate a net income of 10.43 cents. So we have a very stable ability of Coca-Cola to generate net profit through its own assets in recent years.

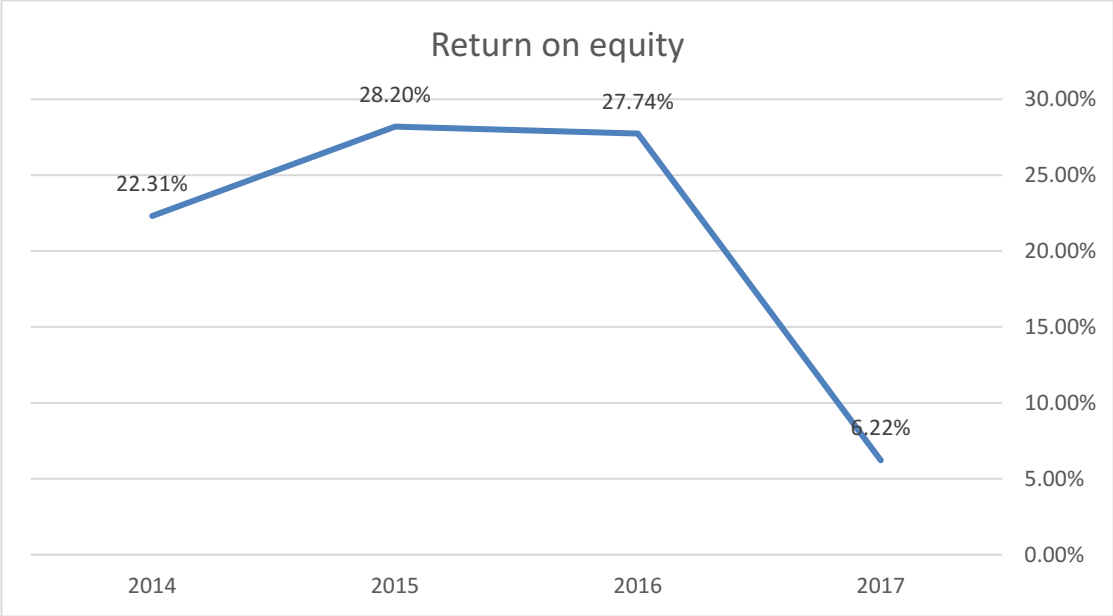
4.1.4 Return on Equity

Return on equity or return on net assets is a profitability measure of a company's ability to profit from its shareholders' investment. That means a net income of 1 per dollar of common shareholder equity. This is an important measure for potential investors because they want to see how companies can effectively use their money to generate net income. Return on equity of Coca-Cola company from 2014 to 2017 is shown in Tab. 4.4 and Chart.4.4. It is calculated according to the formula (2.13).

Tab. 4.4: Return on equity of Coca-Cola company (USD-Billion).

	2017	2016	2015	2014
EAT	1.1794	6.441	7.265	6.818
Equity	18.977	23.22	25.764	30.561
Return on equity	6.215%	27.739%	28.198%	22.309%

Chart. 4.4: Return on Equity of Coca-Cola company.



Return on equity is the ratio of net profit to company equity. A higher return on equity indicates that the company's earnings are reinvested to generate more revenue. We can see from Tab.4.4 that the return on equity has increased significantly from 22.309% to 28.198% from 2014 to 2015. From 2015 to 2016, the return on equity has decreased slightly, but it is relatively stable, maintaining at 28%. From 2016 to 2017, the return on equity decreased drastically from 27.739% to 6.215%.

From 2014 to 2015, Coca-Cola's equity interest decreased from 30.561 to 25.764, while net profit increased, so the return on equity increased. In 2015 to 2016, the return on equity is relatively stable. Each dollar of common stock can bring 28 cents to shareholders. In 2017, the Coca-Cola Company was the most unhappy year. Due to the impact of tax policy, income tax in 2017 is three times that of 2016. In the end, the net profit is greatly reduced and the return on equity is also reduced.

Since the return on equity has been fluctuating between 2014 and 2017, it is not good news for shareholders. For other investors, it is necessary to consider more.

4.2 Liquidity Ratios of Coca-Cola Company

Liquidity ratio measures a company's ability to meet its short-term liabilities. They include three ratios: current ratio, quick ratio and cash ratio. In this part, we analyze the liquidity ratio of Coca Cola company in detail.

4.2.1 Current Ratio

We can see current ratio of Coca-Cola company from 2014 to 2017 in Tab. 4.5 and Chart. 4.5. It is calculated according to the formula (2.14)

Tab. 4.5: Current ratio of Coca-Cola company (USD-Billion).

	2017	2016	2015	2014
Current assets	36.545	34.01	33.395	32.986
Current liabilities	27.194	26.532	26.93	32.374
Current ratio	1.344	1.282	1.240	1.019

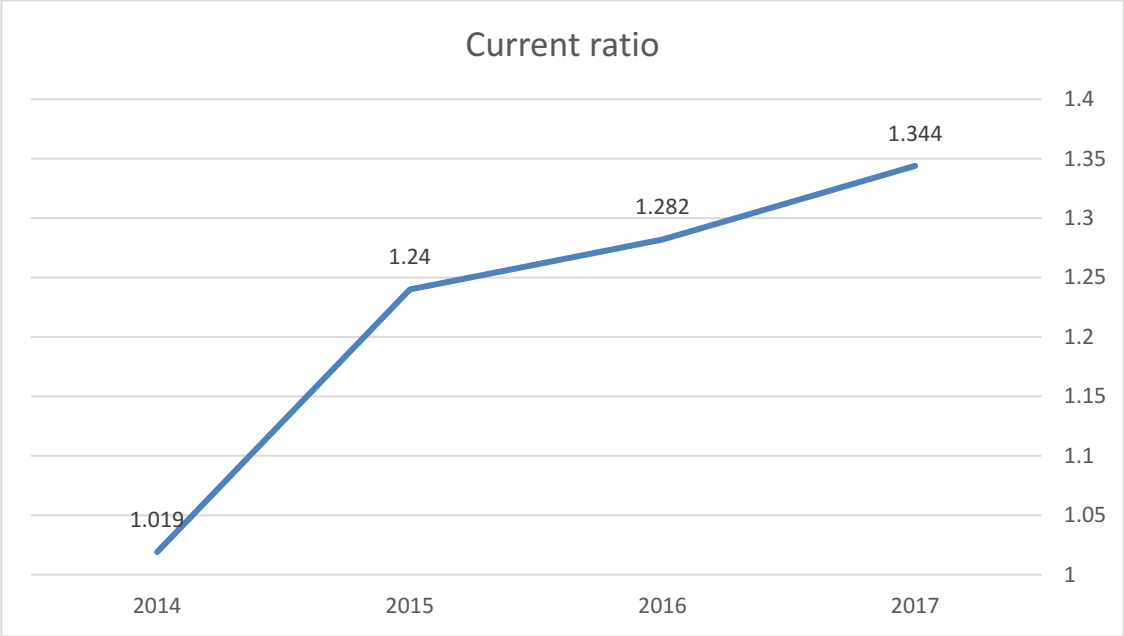
The current ratio is a measure of a company's ability to use its liquid assets to repay short-term liabilities. The current ratio is an important indicator of liquidity as short-term liabilities will expire next year. We can see from Tab. 4.5 that the current ratio increased from 1.019 to 1.240 from 2014 to 2015. From 2015 to 2016, the current ratio increased slightly. From 2016, 2017 has maintained steady growth.

Because cash, cash equivalents and marketable securities are all current assets, they can be easily converted into cash in the short term. Companies can use these assets to repay short-term liabilities. Then we will analyze why the current ratio fluctuates on this trend. We can see from Annexes 1: Balance sheet of Coca-Cola, cash and cash equivalent, accounts receivable, inventory has been decreasing from 2014 to 2017, but because other liquid assets have been from 2014 to 2017 Increasing. Therefore, liquid assets have not decreased from 2014 to 2017, but have increased. Current liabilities have remained stable at 26.8 from 2015 to 2016. Therefore, the current ratio has been increasing from 2014 to 2017.

From the results of the current ratio, we see that between 2014 and 2017, the current ratio is between 1-1.3, and banks prefer a current ratio of at least 1 to 2 (see below for sources).[5] If the company applies for a loan from a bank, it can be successful because all current liabilities will be paid by current assets.

[5] https://www.myaccountingcourse.com/financial-ratios/current-ratio

Chart. 4.5: Current ratio of Coca-Cola company.



4.2.2 Quick Ratio

We can see the quick ratio of Coca-Cola company from 2014 to 2017 in Tab. 4.6 and Chart. 4.6. It is calculated according to the formula (2.15)

Tab. 4.6: Quick ratio of Coca-Cola company (USD-Billion).

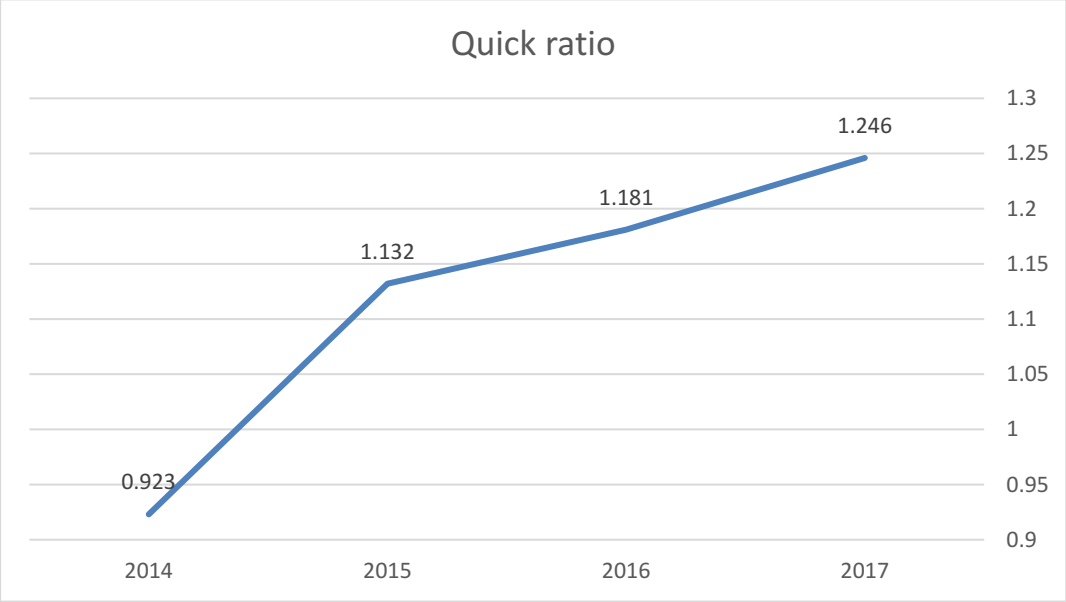
	2017	2016	2015	2014
Current assets-inventories	33.89	31.335	30.493	29.886
Current liabilities	27.194	26.532	26.93	32.374
Quick ratio	1.246	1.181	1.132	0.923

The quick ratio is a measure of a company's ability to pay its current liabilities when only quick assets expire. A higher quick ratio is more beneficial to the company because it shows that quick assets are faster than current liabilities. We can see from Tab. 4.6 that the rapid ratio has grown slightly from 2014 to 2015. From 2015 to 2016, the rapid ratio was relatively stable at 1.1. From 2016 to 2017, it increased slightly. From 2017 to 2017, the fast rate as a whole is an upward trend.

We analyze the results from the quick ratio 2014 to 2017. In 2014, the quick ratio was 0.923, and we can conclude that Coca-Cola cannot use quick assets to repay all current

liabilities, and the remaining debt will be added to 2015. From 2015 to 2017, the rapid ratios ranged from 1.1 to 1.2, and they were able to repay all current liabilities with quick assets and still have some left. Obviously, as the proportion increases, the company's liquidity also increases.

Chart. 4. 6: Quick ratio of Coca-Cola company.



4.2.3 Cash Ratio

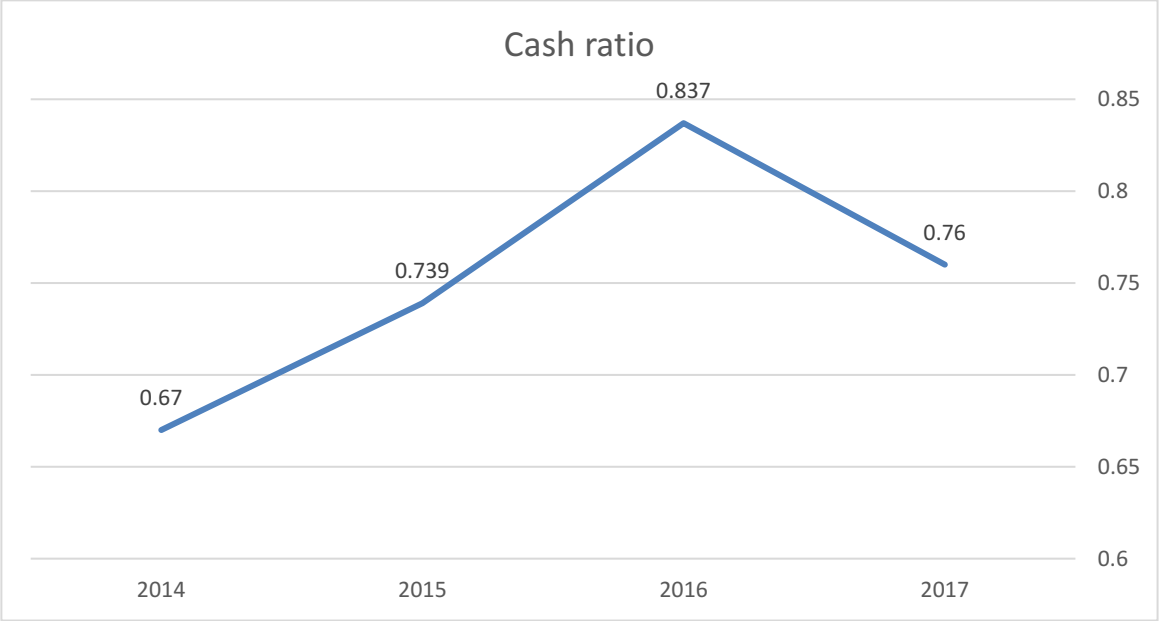
We can see the cash ratio of Coca-Cola company from 2014 to 2017 in Tab. 4.7 and Chart. 4.7. It is calculated according to the formula (2.16)

Cash ratio is the ratio of cash and marketable securities divided by current liabilities. It is used to measure a company's ability to repay its current liabilities only with cash and cash equivalents. The cash ratio is more restrictive than the current ratio or the quick ratio, because no other current assets can be used to repay the cash only with current liabilities. In Tab. 4.7, MS is expressed as Marketable securities, and CL is Current liabilities.

Tab. 4.7: Cash ratio of Coca-Cola company (USD-Billion).

	2017	2016	2015	2014
Cash+ MS	20.675	22.201	19.9	21.675
CL	27.194	26.532	26.93	32.374
Cash ratio	0.760	0.837	0.739	0.670

Chart. 4.7: Cash ratio of Coca-Cola company.



Cash ratios show the extent to which companies pay off their current liabilities only with cash and cash equivalents. From Tab. 4.7, we can see that Coca-Cola's cash ratio increased steadily from 0.67 to 0.837 from 2014 to 2016. From 2016 to 2017, Coca-Cola's cash ratio decreased from 0.837 to 0.76. This was due to the decrease in cash and marketable securities and the increase in current liabilities.

We can analyze the results from the Coca-Cola Company's cash ratio from 2014 to 2017. In 2016, Coca-Cola's cash ratio was 0.67. This means that Coca-Cola can use cash and cash equivalents to repay 67% of current liabilities. In 2015, Coca-Cola's cash ratio was 0.739. This shows that Coca-Cola can use cash and cash equivalents to repay 73.9% of current liabilities. In 2017 Coca-Cola's cash ratio was 0.837. This shows that Coca-Cola can use cash and cash. Cash equivalents to repay 83.7% of current liabilities, which is the highest level in recent years. In 2017, Coca-Cola's cash ratio was 0.76. This shows that Coca-Cola can use cash and cash equivalents to repay 76% of current liabilities. So higher cash coverage means that companies are more liquid and can finance their debt more easily. At the same time, the cash ratio is also the ratio that the bank considers when reviewing the loan application.

4.3 Solvency Ratios of Coca-Cola Company

Solvency ratio measures a company's ability to repay long-term debt. They include debt ratio, debt equity ratio and interest coverage. In this section, we will use these ratios to analyze Coca-Cola's debt situation in detail.

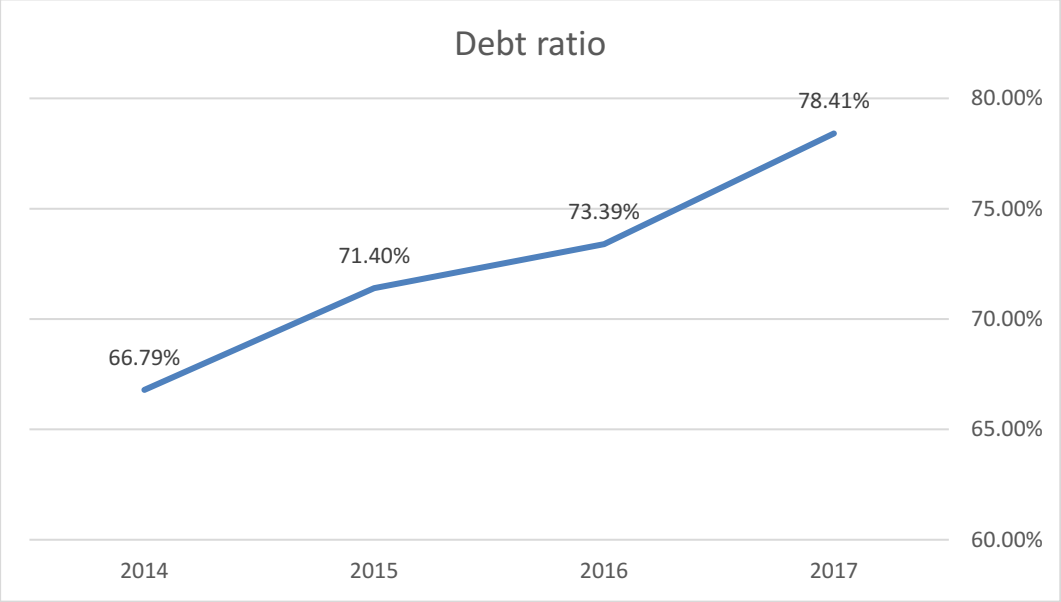
4.3.1 Debt Ratio

Debt ratio of Coca-Cola company from 2014 to 2017 is shown in Tab. 4.8 and Chart 4.8 It is calculated according to the formula (2.17).

Tab. 4.8: Debt ratio of Coca-Cola company (USD-Billion).

	2017	2016	2015	2014
Total debt	68.919	64.05	64.329	61.462
Total assets	87.896	87.27	90.093	92.023
Debt ratio	78.410%	73.393%	71.403%	66.790%

Chart. 4. 8: Debt ratio of Coca-Cola company.



Debt ratios are used to measure the percentage of a company's total liabilities to its total assets. Debt ratios indicate that a company has the ability to repay its debts with its assets. We can see from Tab. 4.8 that Coca-Cola's debt ratio increased from 66.79% to 78.41% between 2014 and 2017.

Before analyzing the results of debt ratios, I introduce two reference criteria here (from the following sources).[6] "The first is the debt ratio of 50%, which shows that the company has twice as much total assets as total liabilities. Therefore, its creditors own 50% of the company's assets, while shareholders own the remaining assets. This is generally considered to be less risky (low leverage). The second is the debt ratio of 100%, which shows that the total assets of

[6] https://www.myaccountingcourse.com/financial-ratios/debt-ratio

the company are equal to the total liabilities, and the company will sell all its assets to repay its debt. This is often considered high risk (high leverage). ” We got a Coca-Cola debt ratio of 66% to 78% between 2014 and 2017, which is already at a high risk level.

4.3.2 Debt to Equity Ratio

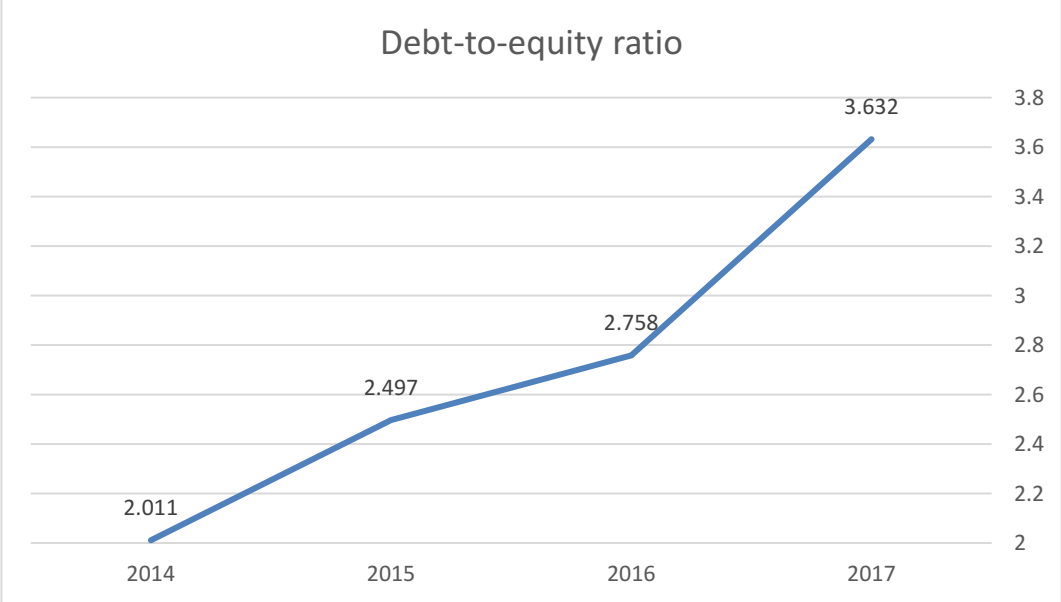
Debt to equity ratio of Coca-Cola company from 2014 to 2017 is shown in Tab. 4.9 and Chart 4.9. It is calculated according to the formula (2.18).

Tab. 4.9: Debt to equity ratio of Coca-Cola company (USD-Billion).

	2017	2016	2015	2014
Total debt	68.919	64.05	64.329	61.462
Total equity	18.977	23.22	25.764	30.561
Debt-to-equity ratio	3.632	2.758	2.497	2.011

Debt-equity ratio is a financial liquidity ratio used to compare the total debt and equity of a company. The higher the ratio of total debt to total equity, the more likely the company is to invest by creditors (also known as financial business is unstable and risky). Conversely, the lower the ratio of total debt to total equity, the more inclined the company is to invest by creditors (usually considered stable business). We can see from Tab. 4.9 that Coca-Cola's debt-to-equity ratio has been rising from 2014 to 2016. The ratio of debt to equity increased from 2.011 to 3.632.

Chart. 4. 9: Debt to equity ratio of Coca-Cola company



We can see it from Tab. 4.9 and Chart. 4.9. The trend of debt-to-equity ratio is the same

as the debt ratio. This ratio is between 2 and 3.6. This is very high for the company. The Coca-Cola Company relies more on loans to raise funds than equity. The Coca-Cola Company should reduce its liabilities and increase its equity to fund the company's operations. In this way, Coca-Cola can reduce the risk of paying liabilities.

First, we analyze Coca-Cola's debt-to-equity ratio in 2014. The debt-to-equity ratio in 2014 turned out to be 2.011, which tells us that creditors have 66.6 cents of assets for each dollar of assets, while shareholders have 33.3 cents of assets. Moreover, from 2014 to 2017, the ratio is growing, creditors have more and more assets of the company, and shareholders have less and less assets. But we need to understand that debt must be repaid to creditors and interest must be paid, so companies with large debts are at high risk. We can see that the company's equity is declining year by year from 30.561 to 18.977. Investors don't want to fund day-to-day operations, because the company is in poor condition, so Coca-Cola will seek additional debt financing.

4.3.3 Interest Coverage

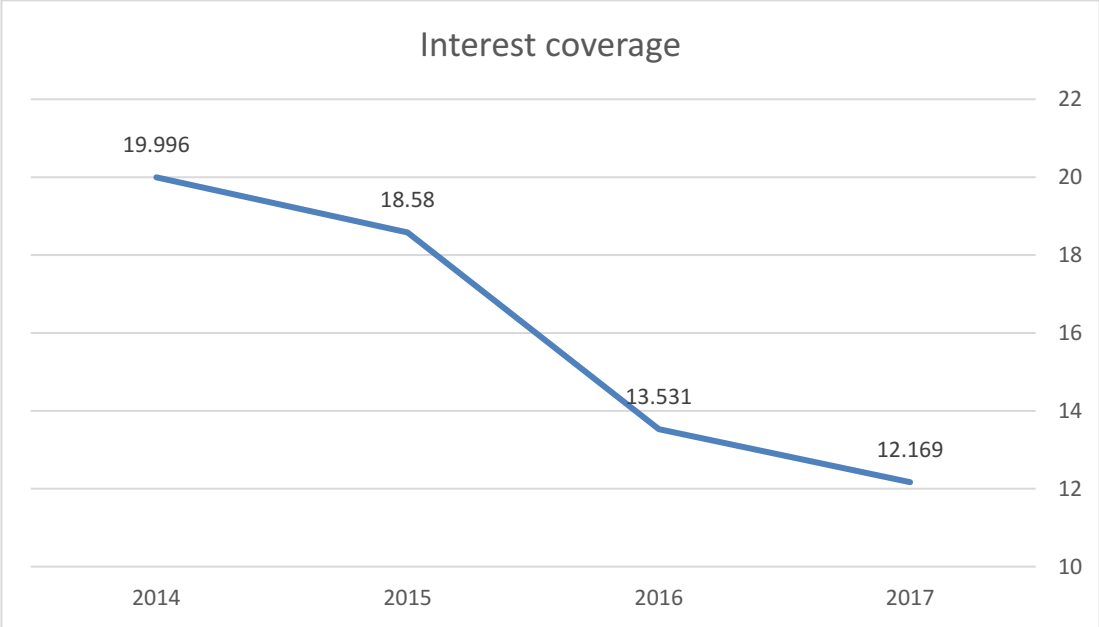
We can see the interest coverage of Coca-Cola company from 2014 to 2017 in Tab. 4.10 and Chart. 4.10. It is calculated according to the formula (2.19).

Tab. 4.10: Interest coverage of Coca-Cola company (USD-Billion)

	2017	2016	2015	2014
Operating profit	9.1634	9.255	9.699	10.238
Interest paid	0.753	0.684	0.522	0.512
Interest coverage	12.169	13.531	18.580	19.996

Interest coverage is a measure of a company's ability to pay interest on its debts in a timely manner. This ratio has nothing to do with whether a company can afford the principal of its debt. It values the company's ability to pay interest. Most creditors and investors can use this ratio to understand the profitability and risk level of the company. We can see from Tab. 4.10 that Coca-Cola's interest coverage has been declining from 2014 to 2017. The decline from 19.996 to 12.169 indicates that Coca-Cola's ability to pay interest on its debts is weakening, but it has little impact on the whole. The company can easily pay interest.

Chart. 4. 10: Interest coverage of Coca-Cola company.



I analyzed the interest coverage of Coca-Cola from 2014 to 2017. In the past four years, Coca-Cola's interest coverage has been above 10, and the highest level in history in 2014 was 19.996. So in the past four years, Coca-Cola's operating profit has been more than 10 times the interest paid. This is good news for creditors, who can not only pay interest and balance to pay the debt principal.

Interest coverage is also an important indicator for bank loan application review. If the interest coverage is less than 1. This means that there is not enough operating profit to pay interest, and may not even be able to repay the debt principal. This shows that the risk is greater and the chances of obtaining the loan are small. If the interest coverage ratio is equal to 1, this means that there is sufficient operating profit to pay interest, but there is also the possibility that the debt principal cannot be repaid. The risk is less than the interest coverage less than 1.

4.4 Activity Ratios of Coca-Cola Company

Activity ratios measure the extent to which companies use their assets for operations. They include average receivable period, accounts receivable turnover rate, inventory turnover rate and total asset turnover rate. In this section, we will use these ratios to analyze the efficiency of asset conversion to measure the efficiency of Coca-Cola's use of corporate assets.

4.4.1 Average Collection Period (ACP)

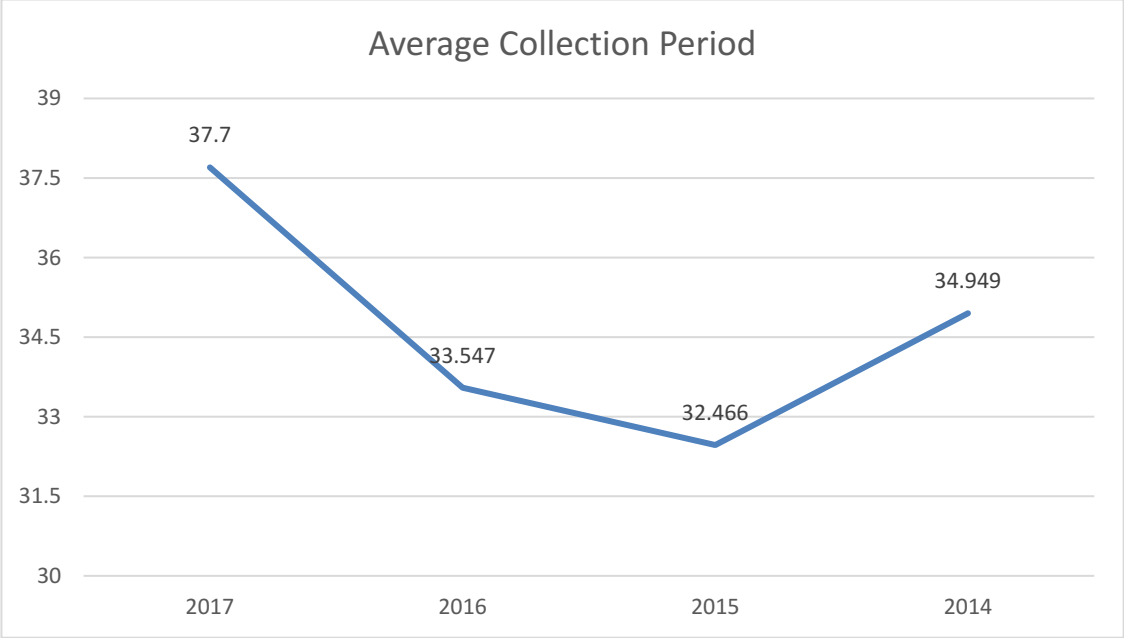
We can see the average collection period of Coca-Cola company from 2014 to 2017 in Tab. 4.11 and Chart. 4.11. It is calculated according to the formula (2.20).

Tab. 4.11: Average collection period of Coca-Cola company (USD-Billion).

	2017	2016	2015	2014
Accounts receivable	3.667	3.856	3.941	4.466
Revenues	35.016	41.379	43.7	46.003
ACP	37.700	33.547	32.466	34.949

The average collection period measures the average time a company takes to recover its receivables. The shorter the time, the faster the receivables can be converted into cash, and the higher the liquidity of the company. From Tab. 4.11, we can see that Coca-Cola's average collection period fluctuated slightly from 2014 to 2015, but it could basically stabilize in about 34.5 days. So Coca-Cola has about 35 days to convert its sales of goods (accounts receivable) into cash and put them into production and operation.

Chart. 4. 11: Average collection period of Coca-Cola company.



4.4.2 Accounts Receivable Turnover (ART)

Accounts receivable turnover of Coca-Cola company from 2014 to 2017 is shown in Tab. 4.12 and Chart. 4.12. It is calculated according to the formula (2.21).

Tab. 4.12: Accounts receivable turnover of Coca-Cola company (USD-Billion).

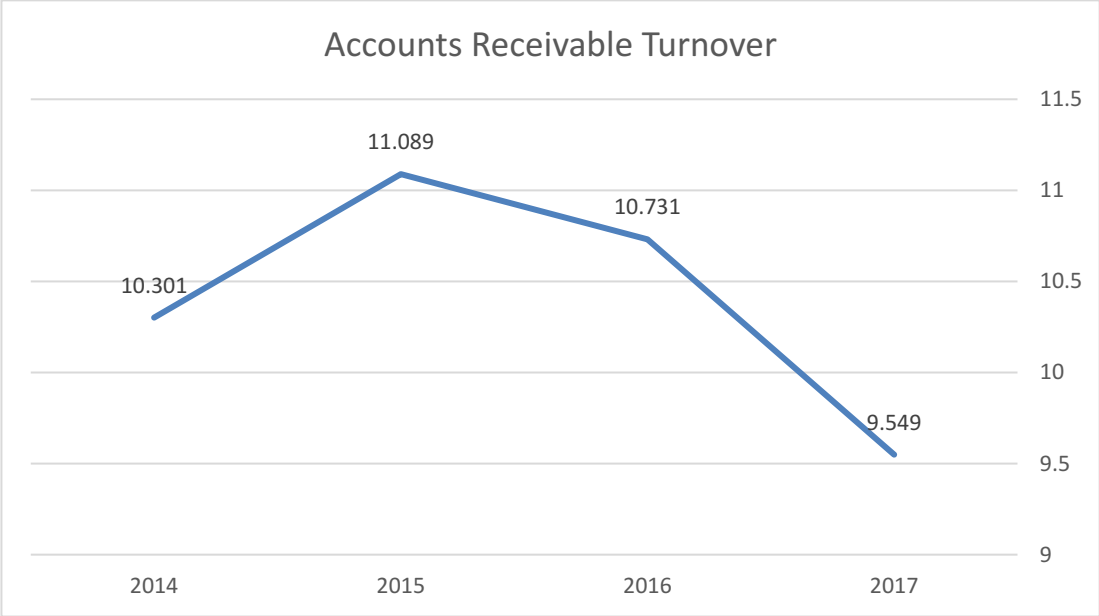
	2017	2016	2015	2014
Revenues	35.016	41.379	43.7	46.003
Accounts receivable	3.667	3.856	3.941	4.466
ART	9.549	10.731	11.089	10.301

Accounts receivable turnover rate is used to measure the number of times an enterprise converts accounts receivable into cash over a period of time. This ratio is also related to the company's liquidity. The higher the liquidity, the more times it is converted into cash, which also means that accounts receivable can be converted into cash faster. We can see from Tab. 4.12 that Coca-Cola's receivable turnover increased from 10.301 to 11.089 from 2014 to 2015, and decreased from 11.089 to 9.549 from 2015 to 2017.

Next, we analyze the results of the accounts receivable turnover rate of Coca-Cola from 2014 to 2017. Because the turnover rate of accounts receivable measures the ability of enterprises to collect accounts receivable, a higher turnover rate of accounts receivable means that companies frequently collect accounts receivable in this year. Coca-Cola's account receivable turnover rate in 2014 is 10.301, which means that the company has converted accounts receivable into cash on average 10 times in this year, almost every 35 days can be completed to convert accounts receivable into cash. We can continue to calculate Coca-Cola's accounts receivable turnover rate of 11.089 in 2015, that is, it can be completed every 32 days to convert accounts receivable into cash. In 2016, Coca-Cola's account receivable turnover rate was 10.731, which means that it can convert accounts receivable into cash every 33 days. In 2017, Coca-Cola's account receivable turnover rate was 9.549, which means that it can convert accounts receivable into cash every 37 days. The results obtained here are the same as those obtained in the previous average collection period, and the two ratios can be verified mutually.

Accounts receivable turnover rate is also an important indicator of a company's credit sales. Companies with higher accounts receivable turnover are more likely to adopt credit.

Chart. 4.12: Accounts receivable turnover of Coca-Cola company.



4.4.3 Inventory Turnover (IT)

We can see the inventory turnover of Coca-Cola company from 2014 to 2017 in Tab. 4.13 and Chart. 4.13. It is calculated according to the formula (2.22).

Tab. 4. 13: Inventory turnover of Coca-Cola company (USD-Billion).

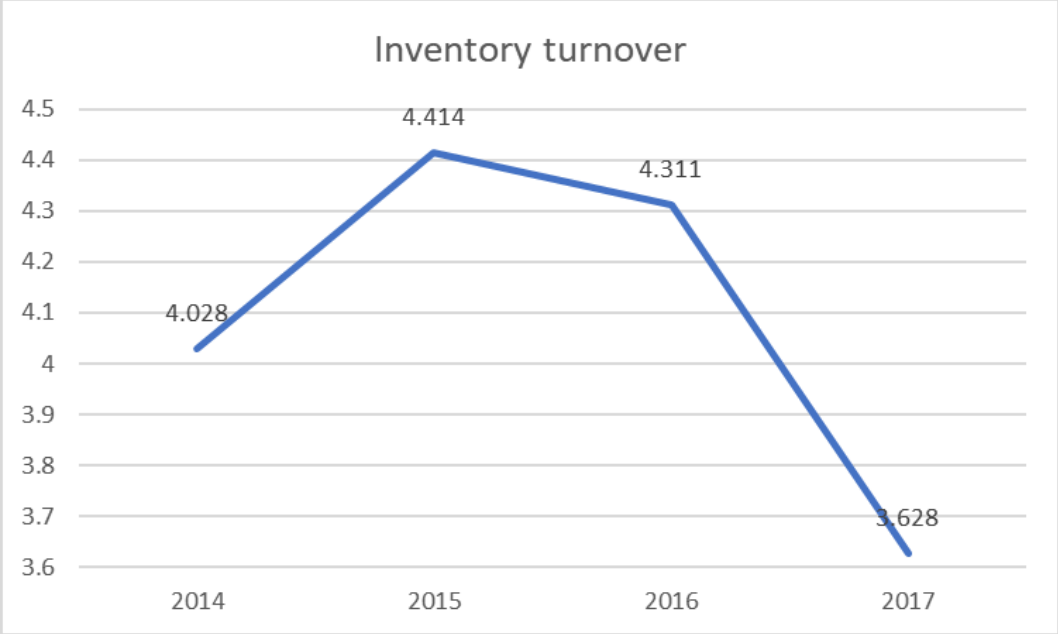
	2017	2016	2015	2014
Cost of sale	13.303	16.622	17.396	17.99
Average inventory	3.667	3.856	3.941	4.466
Inventory turnover	3.628	4.311	4.414	4.028

Inventory turnover rate shows the effectiveness of inventory management by comparing sales costs with average inventory over a period of time. It measures the number of times a company sells its total average inventory in a year. We can see from Tab. 4.13 that Coca-Cola's inventory turnover increased from 4.028 to 4.414 between 2014 and 2015. Coca-Cola's inventory turnover rate from 4.414 to 3.628 in 2015 to 2017 means that inventory sales are decreasing and there is no good inventory control.

Next we analyze the results of the Coca-Cola Company's inventory turnover rate from 2014 to 2017. In 2014, Coca-Cola's inventory turnover rate was 4.023. This means that in one year, the company sold an average of 4 total inventory. That is, the goods in the stock can be

sold out every 90 days on average. We use the same approach to analyze the next three years. In 2015, Coca-Cola's inventory turnover rate was 4.414, which means that the goods in the inventory can be sold out every 82 days. In 2016, Coca-Cola's inventory turnover rate was 4.311, which means that the goods in the inventory can be sold out every 84 days. In 2016, Coca-Cola's inventory turnover rate was 3.628, which means that the goods in the inventory can be sold out every 100 days. After changing our expression, we can find that from 2014 to 2016, Coca-Cola's inventory can be fully sold every 85 days. In 2017, it took 100 days to fully sell the inventory. During the year, Coca-Cola's inventory liquidity was problematic and its ability to turn its inventory into cash was blocked.

Chart. 4. 13: Inventory turnover of Coca-Cola company.



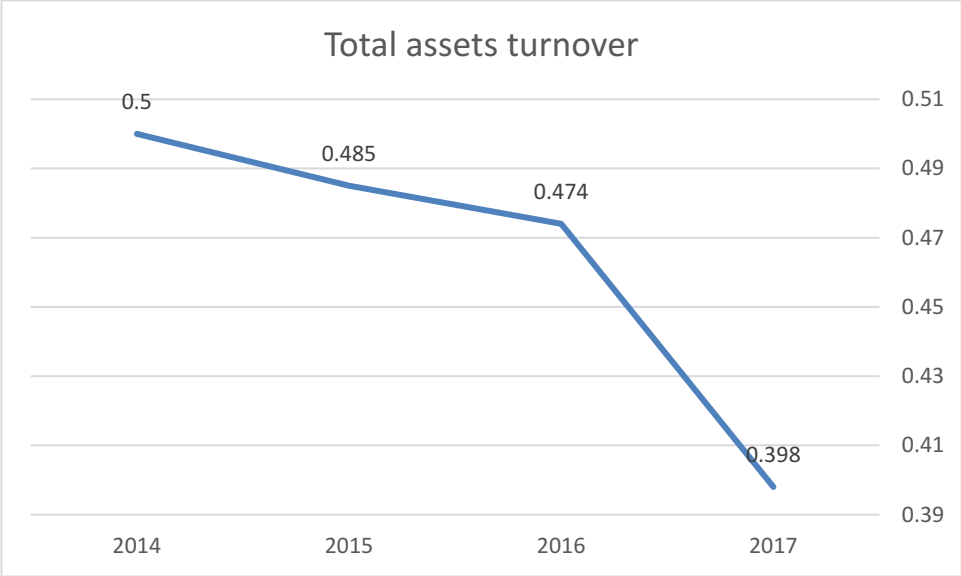
4.4.4 Total Assets Turnover (TAT)

Total assets turnover of Coca-Cola company from 2014 to 2017 is shown in Tab. 4.14 and Chart. 4.14. It is calculated according to the formula (2.23).

Tab. 4. 14: Total assets turnover of Coca-Cola company (USD-billion).

	2017	2016	2015	2014
Revenues	35.016	41.379	43.7	46.003
Total assets	87.896	87.27	90.093	92.023
Total assets turnover	0.398	0.474	0.485	0.500

Chart. 4. 14: Total assets turnover of Coca-Cola company.



Total asset turnover rate is the ability of a company to generate sales revenue through its assets by comparing sales revenue with total assets. In other words, this ratio shows how companies can effectively use their assets to generate sales. Higher total asset turnover can make more efficient use of its assets. Lower total asset turnover means that companies do not use their assets fully and efficiently to generate sales revenue, and there may be problems in company management. Figure Tab. 4.14 shows that Coca-Cola's total asset turnover declined from 0.5 to 0.398 between 2014 and 2017.

Next, we analyze the results of Coca-Cola's total asset turnover rate from 2014 to 2017. If the total asset turnover rate is equal to 1, this means that sales revenue is equal to total assets. The company generates sales revenue of one dollar for every dollar it invests in assets. 2014 was the year with the highest total asset conversion rate of 0.5 in recent years. This means that Coca-Cola can generate 50 cents of sales revenue per dollar of assets, the highest level in recent years. In 2017, the total asset turnover rate was 0.398, which was caused by the sharp decrease in sales revenue. The main reason for the decrease in sales revenue was the change in consumer awareness (many carbonated drinks were labeled unhealthy) and the liquidity problems of inventory in 2017, which resulted in many inventories not being translated into sales revenue in time.

4.5 DuPont Analysis of Coca-Cola Company

In this chapter, we use DuPont analysis of return on equity to analyse Coca-Cola company. As we have introduced in chapter 2, ROE can be decomposed to three components:

net profit margin ($\frac{EAT}{Revenues}$), assets turnover ($\frac{Revenues}{Total\ assets}$), financial leverage ($\frac{Total\ assets}{Equity}$). We decompose ROE in three components because it is more convenient for us to compute it. Tab. 4.15 is the values of each component. Tab. 4.16 is values of absolute change of each component.

Tab. 4.15: Values of each component from 2014 to 2017.

	2017	2016	2015	2014
Net profit margin	0.034	0.156	0.166	0.148
Assets turnover	0.398	0.474	0.485	0.500
Financial leverage	4.632	3.758	3.497	3.011
ROE	0.06126	0.27788	0.28154	0.22281

Tab. 4.16: Values of absolute change of each component from 2014 to 2017.

	2016/2017	2015/2016	2014/2015
Net profit margin	-0.122	-0.01	0.018
Assets turnover	-0.076	-0.011	-0.015
Financial leverage	0.874	0.261	0.486
ROE	-0.21662	-0.00366	0.05873

From Tab. 4.15, we can see that Coca-Cola's net profit margin increased from 0.148 to 0.156 in 2014-2016. From 0.156 to 0.034 in 2016-2015, we have analyzed this reason before. Coca-Cola's asset turnover rate decreased from 0.5 to 0.398 between 2014 and 2017. Our previous analysis gave the reasons why the asset turnover rate in 2017 was much lower than that in other years. Financial leverage increased from 3.011 to 4.632 between 2014 and 2017.

The financial leverage ratio measures the value of the company's equity by analyzing its overall debt situation. When shareholders own most of the assets, the company is at a low level of leverage. When creditors own most of the assets, the company is at a high level of leverage (high risk). We can analyze the financial leverage ratio in 2014 and get that Coca-Cola's debt assets are twice as leveraged as its equity assets. With the increasing financial leverage rate in recent years, Coca-Cola began to move towards ultra-high leverage level.

In this thesis, we will use method of gradual changes to analysis how the component ratios contribute to the change in basic ratio. Method of gradual changes works with absolute changes in component ratios. We can see the results of using methods of gradual changes from 2014 to

2015 in Tab. 4.17, the result from 2015 to 2016 in Tab. 4.18, the result from 2016 to 2017 in Tab. 4.19.

Tab. 4.17: Methods of gradual changes in 2014 and 2015.

	2014(a0)	2015(a1)	Change (Δa)	Influence (ΔX_a)	order
Net profit margin(a1)	0.148	0.166	0.018	0.0271	1
Assets turnover(a2)	0.500	0.485	-0.015	-0.00749	3
Financial leverage(a3)	3.011	3.497	0.486	0.03913	2
SUM				0.058739	

$$\Delta \mathrm{X}a_1 = 0.018 \times 0.5 \times 3.011 = 0.0271$$
$$\Delta \mathrm{X}a_2 = 0.166 \times -0.015 \times 3.011 = -0.00749$$
$$\Delta \mathrm{X}a_3 = 0.166 \times 0.485 \times 0.486 = 0.03913$$

Tab. 4.18: Methods of gradual changes in 2015 and 2016

	2015(a0)	2016(a1)	Change (Δa)	Influence (ΔX a)	order
Net profit margin(a1)	0.166	0.156	-0.01	-0.01696	1
Assets turnover(a2)	0.485	0.474	-0.011	-0.006	3
Financial leverage(a3)	3.497	3.758	0.261	0.0193	2
SUM				-0.0037	

$$\Delta \mathrm{X}a_1 = -0.01 \times 0.485 \times 3.497 = -0.01696$$
$$\Delta \mathrm{X}a_2 = 0.156 \times -0.011 \times 3.497 = -0.006$$
$$\Delta \mathrm{X}a_3 = 0.156 \times 0.474 \times 0.261 = 0.0193$$

Tab. 4.19: Methods of gradual changes in 2016 and 2017

	2016(a0)	2017(a1)	Change (Δa)	Influence (ΔX a)	order
Net profit margin(a1)	0.156	0.034	-0.122	-0.21732	1
Assets turnover(a2)	0.474	0.398	-0.076	-0.00971	3
Financial leverage(a3)	3.758	4.632	0.874	0.01183	2
SUM				-0.2162	

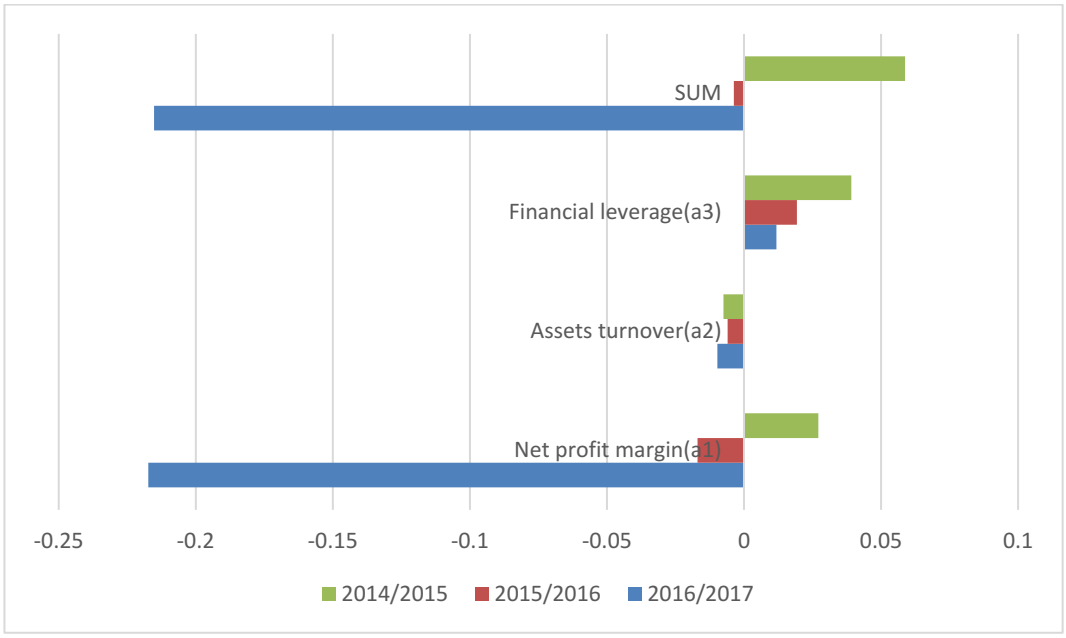
$$\Delta Xa_1 = -0.122 \times 0.474 \times 3.758 = -0.21732$$
$$\Delta Xa_2 = 0.034 \times -0.076 \times 3.758 = -0.00971$$
$$\Delta Xa_3 = 0.034 \times 0.398 \times 0.874 = 0.01183$$

We then aggregate these results into a table. From 2014 to 2017 in Tab.4.20 and Chart 4.15. So we can analyze the data more easily.

Tab. 4.20: Methods of gradual changes from 2014 to 2017.

	2016/2017	2015/2016	2014/2015
Net profit margin(a1)	-0.21732	-0.01696	0.0271
Assets turnover(a2)	-0.00971	-0.006	-0.00749
Financial leverage(a3)	0.01183	0.0193	0.03913
SUM	-0.2152	-0.0037	0.058739

Chart. 4.15: Methods of gradual changes from 2014 to 2017.



We can see it from Tab. 4.17 The net profit margin has an impact of 0.0271, the asset turnover rate has an impact of -0.00749, and the financial leverage has an impact of 0.03913. Both net profit margin and asset regulation are negative, which means that if the net profit margin and asset turnover rate increase, the return on equity will decline. But if financial leverage increases, the return on equity will fall. From 2014 to 2015, the financial leverage has the greatest impact on the return on equity, which is a positive impact. The asset turnover rate

has the least impact on the return on equity, and the impact is also negative.

From Tab. 4.18 We can see that all of these components have a negative impact on the return on equity from 2015 to 2016. Among these components, asset turnover has the least impact on return on equity, while financial leverage has the greatest impact on equity. If these components increase, the return on equity will rise.

We can see it from Tab. 4.19 Net profit margin and asset turnover rate have a negative impact on equity yield, and financial leverage has a positive impact on the return on equity from 2016 to 2017. Net profit margin has the greatest impact on return on equity, and asset turnover has the least impact on return.

In the end, the first method I used to quantify the influence was a gradual change. This method is simple to calculate and the conclusion can be obtained intuitively. Regarding the remaining three methods: logarithmic decomposition method, functional decomposition method, and integral method. We can also get the same conclusion, so I used the first method here.

5 Conclusion

Financial analysis is one of the key parts of the company's complex financial management. A wide range of financial ratios apply to the assessment of a company's financial performance. The goal is to analyze and evaluate the company's financial performance and provide necessary suggestions for its future development. The main objective of financial analysis is to assess the company's current financial situation (financial health), assess the company's possible future development, and prepare the necessary steps to improve its financial situation, ensure its future prosperity and improve its future decision-making-making process.

The goal of this thesis is to analyze Coca-Cola's financial situation and operation from 2014 to 2017 through financial ratio analysis and DuPont analysis.

In Chapter 2, there are four parts. The first part is the financial statements, including balance sheet, income statement and cash flow statement. Financial statements are the basis of financial analysis. Through the analysis of the company's financial statements, we can evaluate the company's business, measure the company's financial situation, and predict the company's future development trend. The second part is general size analysis, including vertical common size analysis and horizontal common size analysis. We can analyze the financial statements data and their changes over time, and identify trends and major differences. The third part is the financial ratio analysis, including four ratios: profitability, liquidity ratio, solvency ratio, activity ratio and DuPont analysis. By analyzing these ratios, we can make a scientific judgment on the company's financial and business performance and profitability. Through the analysis of financial statements and these ratios, companies can help to make effective decisions and help companies develop more steadily and healthily. The fourth part is Dupont analysis method. I concisely elaborated what is Dupont's analysis method and what its significance is. Later, the pyramid decomposition of ROE is introduced. By decomposing ROE into three financial ratios, the impact of which aspects on the operation of the company is analyzed. Finally, the quantitative impact is introduced, which can be further divided into four methods.

Chapter 3 consists of four parts. The first part is the history of Coca-Cola Company. Coca-Cola is the world's largest beverage producer. They cover more than 200 countries, with 48% market share. They offer all kinds of drinks which have an unshakable position in the world. The second part is the structure of Coca-Cola Company. Firstly, it introduces that the board of directors of Coca-Cola Company is composed of 5 independent directors and 13 main

shareholders. Then it introduces the management methods of the company. The third part is the company's competition for Coca-Cola. The biggest competitor is Pepsi. Then it introduces the advantages and disadvantages of the competition. In the fourth part, we use Common-size Analysis to draw some conclusions from the analysis. From the vertical common-size analysis, we can know that the ratio of long-term assets to total assets is lower than current assets; debt accounts for a larger proportion of liabilities; before 2015, long-term liabilities account for a larger proportion of current liabilities, while after 2015, the opposite is true. From the horizontal-size analysis, we can know that from 2015 to 2016, Coca-Cola's financial situation is not very good, and then in 2016 and 2017, the company began to improve.

Chapter 4 includes four basic financial ratios used to evaluate Coca-Cola's major financial projects, and finally the DuPont analysis method is used to evaluate the impact. Coca-Cola's profitability was relatively low between 2015 and 2016, and then increased in 2016 and 2017. Coca-Cola's liquidity level reached its highest level in recent years in 2015, and the overall liquidity level fluctuated slightly. Solvency was higher in 2014 and 2015, then declined in 2016 and 2017. In DuPont analysis, we analyzed the factors that affect the ROE component ratio. We can conclude that Net profit margin has a significant impact on ROE from 2014 to 2017.

This thesis mainly analyses the financial statements of Coca-Cola Company through financial ratio analysis and DuPont analysis. The purpose of elaboration and analysis is to provide certain information for all stakeholders. There are many methods of financial statement analysis. Investors, managers and other stakeholders should have certain professional judgment ability, obtain useful information, and better serve the company.

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List of Abbreviations

FL Financial leverage

ACP Average collection period

ART Accounts receivable turnover

IT Inventory turnover

OPM Operating margin

ROE Return on equity

TAT Total assets turnover

CF Cash flow

MS Marketable securities

CL Current liabilities

EBT Earning before taxes

NPM Net profit margin

ROA Return on assets

EBIT Earning before interest and taxes

EAT Earning after taxes

REV Revenue

OP Operating profit

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List of Annexes

Annexes

Annexes 1: Balance sheet of Coca-Cola (USD-Billion).

Unit: USD (billion)	**2017/12/31**	**2016/12/31**	**2015/12/31**	**2014/12/31**
Current assets	**36.545**	**34.01**	**33.395**	**32.986**
Cash and short-term investments	20.675	22.201	19.9	21.675
Short-term accounts receivable	3.667	3.856	3.941	4.466
Inventory	2.655	2.675	2.902	3.1
Other current assets	9.548	5.278	6.652	3.745
Non-current assets	**51.351**	**53.26**	**56.698**	**59.037**
Net assets of plant and equipment	8.203	10.635	12.571	14.633
The total investment and advances of the project were	23.229	18.464	16.806	14.693
Long-term notes receivable	0	0	0	0
Intangible assets	16.636	21.128	24.132	26.372
Deferred income tax assets	0.331	0.326	0.36	0.319
Other assets	2.952	2.707	2.829	3.02
Total assets	**87.896**	**87.27**	**90.093**	**92.023**
Current liabilities	**27.194**	**26.532**	**26.93**	**32.374**
Short-term debt (including some LTD)	16.503	16.025	15.806	22.682
Accounts payable	2.288	2.682	2.795	2.089
Income tax payable	0.41	1.371	0.775	0.911
Other current liabilities	7.993	6.454	7.554	6.692
Non-current liabilities	**41.725**	**37.518**	**37.399**	**29.088**
Long-term liabilities	31.182	29.684	28.407	19.063
Provision risk and cost	0	0	0	0
Deferred income tax liabilities	2.522	3.753	4.691	5.636
Other liabilities	8.021	4.081	4.301	4.389
Total liabilities	**68.919**	**64.05**	**64.329**	**61.462**
Total shareholders equity	**17.072**	**23.062**	**25.554**	**30.32**
Non-equity reserve	0	0	0	0
Preferred stock-book value	0	0	0	0
Ordinary equity(total)	17.072	23.062	25.554	30.32
Accumulated minority shareholders rights	1.905	0.158	0.21	0.241
Total equity	18.977	23.22	25.764	30.561
Total liabilities and shareholders equity	87.896	87.27	90.093	92.023

Annexes 2: Income statement of Coca-Cola (USD-Billion).

Unit: USD (billion)	2017/12/31	2016/12/31	2015/12/31	2014/12/31
Gross revenue	**35.016**	**41.379**	**43.7**	**46.003**
- costs of sold goods	13.303	16.622	17.396	17.99
Gross profit	**21.713**	**24.757**	**26.304**	**28.013**
-sales management and administrative fees	12.549	15.393	16.504	17.469
-other operating expenses	0.0006	0.109	0.101	0.306
Interest-bearing profit before tax	9.1634	9.255	9.699	10.238
+non-operating income (expenditure)	1.672	1.962	2.07	1.122
-non-recurrent expenditure	3.343	2.506	1.743	1.829
-interest expenses	0.753	0.684	0.522	0.512
Pre-tax net profit	6.7394	8.027	9.504	9.019
-income tax	5.56	1.586	2.239	2.201
+other after-tax adjustments	*0*	0	0	0
+Earnings and equity of associated companies	0	0	0	0
Combined net profit	1.1794	6.441	7.265	6.818
-minority shareholders' equity expenses	0.0001	0.023	0.015	0.026
Net profit	**1.1793**	**6.418**	**7.25**	**6.792**
-preferred stock dividend	0	0	0	0
Net profit of general available income	1.1793	6.418	7.25	6.792
Basic earnings per share(unit:1USD)	0.29	1.51	1.69	1.62
Diluted earnings per share(unit:1USD)	0.29	1.49	1.67	1.6
Earnings before interest, tax, depreciation and amortization	10.418	11.151	11.77	12.52